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COURSE OF LECTURES
ON
DISEASES OF THE SKIN;
THEIR
HISTORY, PATHOLOGY, AND TREATMENT.

Delivered in the Middlesex Hospital, during the Summer Session, 1842, by

ERASMUS WILSON, Esq.,
Consulting Surgeon to the St. Pancras Infirmary; Lecturer on Anatomy and Physiology in the Middlesex Hospital School.

LECTURE VIII.

THE eruptive fevers, namely, rubeola, scarlatina, and variola, are similar in their origin and similar in many of their phenomena. In their cause they are identical: a poisonous virus diffusable by infection, and that that cause is the same in all the three diseases I am strongly inclined to believe. The differences in their symptoms and course are such as may be referred to modifications of the poisonous principle, either by physical or vital conditions. You must not, however, conceive that the same treatment is applicable to the whole, any more than you would infer the necessity for a similar treatment in disorder of different parts of the same tissue. The same physiological and pathological changes existing in different parts of the same mucous membrane often require, as we know, to be treated very differently, and so it is with the diseases under examination.

The eruptive fevers originated in Arabia, and were first described by the writers of the Saracenic school. Ahrun, a priest of Alexandria, gave the earliest account of variola, in the sixth century, and his learned successor, Rhazes, has left an excellent description of scarlatina and rubeola. From Arabia, these diseases were speedily propagated to Europe, and their progress was aided by the free communication with the East established by the Crusades. At the present day the eruptive fevers are distributed over the entire world. Although unknown to Europe till an earlier date than that of the Saracenic school, it is more than probable that the countries to the east of Arabia were already familiar with the ravages of these diseases, and that their appearance in the East Indies and China had been observed from time immemorial.

RUBEOLA, OR MEASLES.

Rubeola is an acute inflammation of the tegumentary investment of the entire body, both cutaneous and mucous, associated with fever of an infectious and contagious kind.

Upon the skin rubeola is characterised by a patchy redness, the patches having a semi-lunar or annular form, and being separated from each other by irregular interspaces of a lighter tint. On closer examination these patches are seen to be composed of an assemblage of minute red points, the latter appearance being produced by the dermic papillæ in a state of congestion. When the efflorescence is very abundant there may be observed, interspersed every here and there, certain points of a deeper red than the rest, and slightly raised above the surface, so as to offer a granular sensation to the touch. The efflorescence is most abundant on the face, where it sometimes assumes an uniform redness; on the back it is also abundant; but in some other situations, as remarked by Dr. Robert Williams, it is less apparent; of the latter situations are the pudendal region and the hollow of the ham. The cutaneous eruption of rubeola makes its first appearance on the fourth day from the commencement of febrile symptoms; it increases during another four days, and declines on the ninth day, being followed by a copious furfuraceous desquamation of the epidermis. The purplish stain left on the skin by measles, after its decline, and which is due to the remaining dilatation of the capillary vessels, disappears by degrees.

On the mucous membrane the redness would very probably be found precisely similar to that which is seen on the skin, were it possible to examine it equally closely. It is not so general in this tissue as in the former, being more or less limited to the membranous lining of the apertures of the face and air-passages; sometimes, however, it is found to extend completely through the

body, its presence being indicated by the disorder which accompanies its progress.

Rubeola may occur at any period of life, but most usually attacks children and young persons; infants and adults are less susceptible of its influence. According to Hildanus, its effects have also been observed on the fœtus at birth when the mother has suffered from measles during her pregnancy. The period of incubation of measles, according to different authors, varies from four to sixteen days, the average seeming to correspond with the medium period between these extremes. Like other eruptive fevers, an attack of rubeola is, in general, protective of the system against subsequent attacks for the rest of life, but numerous exceptions to this rule exist, and the same individual may be affected several successive times.

In respect of peculiarities in its appearance and course rubeola presents four principal varieties, namely,

Rubeola vulgaris,
" sine catarrho,
" sine exanthemate,
" nigra.

RUBEOLA VULGARIS.

The ordinary form of measles, rubeola vulgaris, commences with the usual series of febrile symptoms, which continue to increase for the space of four days.

The junior student may inquire, What is meant by the usual series of febrile symptoms? and as this question involves the consideration of one of the most important of the duties of the practitioner, I shall briefly reply to it. In the investigation of any disease by the bedside of the patient we have to determine the actual and the relative state of his functions, in order to compare them with the state of health, and thereby to decide how far they may vary from the normal standard. Now, when so many functions as those which give rise to the phenomena of action in the animal machine are to be passed in mental review, and not in one case only, but in every case that may be brought under our notice, it is absolutely necessary that we should establish in our early practice an *order of examination*, and regularly pursue that order as a general principle, whenever we are called upon to investigate disease. My meaning cannot be better illustrated than in the case before us, a case which is characterised by febrile symptoms, in common language by general disorder. The latter expression resolves our labour at once into its elements; if the disorder be general, the nervous system, the vascular system, the respiratory system, the digestive system, the secerning system, and the nutritive system, must all be implicated. The plan of investigation is now evident; we must pursue such an order as shall with certainty and constancy include the consideration of the functions of the whole of these systems, and this will embrace all that is implied by the term febrile symptoms. It is convenient and advisable to begin our examination with the nervous system firstly, because the symptoms originating in disorder of the functions of that system are most obvious to the patient himself; and secondly, because the most important of the apparatuses of life are therein concerned. The symptoms indicative of disorder of the *nervous system* in rubeola are, chills, succeeded by burning heat, listlessness, languor, drowsiness, pains in the head, in the back, and in the limbs. Passing on to the *vascular system*, we find the action of the heart quickened as denoted by the frequency of the pulse. The *respiratory system* partakes also of the excitement, as is evinced by quickened respiration, heat and tightness at the chest, heat and fœtor of the breath, hoarseness, and a frequent dry cough. Turning now to the *digestive system*, and following its organs, anatomically, from the commencement to the termination of the alimentary canal, we ascertain that the mouth is dry and parched, the tongue white, with red edges and tip, the taste lost, the throat sore, and frequently some degree of tenderness at the epigastrium. In combination with this pathological condition of the alimentary apparatus, there is loss of appetite, thirst, nausea, often vomiting, and constipation. In a pathological point of view, the extension of the alimentary mucous membrane from the fauces upwards to the nose, and thence to the front of the eyeballs and lachrymal glands, may be regarded as a part of the digestive system; hence we should remark in rubeola congestion and dryness of the mucous membrane, quickly succeeded by profuse lachrymation and sneezing. Disturbance in the function of the *secerning system* is indicated by dryness and heat of the mucous surfaces, heat and dryness of the skin, and scanty, high-coloured, and burning urine. Disordered *nutritive function* cannot be estimated at the outset of any disease, but follows as a natural consequence of most. Now, the train of symptoms here laid down are present in greater or less proportion in every febrile disease. It is therefore our duty to make ourselves familiar with them, in order that we may detect shades of difference which the common observer is unable to appreciate. Indeed, it is on these frequently slight variations of expression or intensity that the correct diagnosis of disease frequently depends. Thus, of the general symptoms of fever above-mentioned a few might be selected as pathognomonic of rubeola; as, for instance, soreness of throat, dry cough, and congestion of the mucous membrane of the eyeballs and nose, this congestion being quickly accompanied by abundant lachrymation, the flow of a transparent fluid from the nose, and sneezing.

In young children, other and more severe consequences of disorder of the nervous system are sometimes superadded to the preceding, namely, convulsions. The spasmodic actions of the muscular system being the effect of reflex action of the spinal nerves, induced by irritation conveyed to the nervous centres.

The efflorescence of rubeola makes its appearance on the fourth day, having been preceded the day before by redness and congestion of the conjunctiva and pituitary membrane, accompanied with coryza and sneezing. In children who possess a highly sensitive skin the eruption may appear as early as the third, while in others it may be retarded till the fifth or sixth day. It is first apparent on the forehead and front of the neck, then upon the cheeks and around the nose and mouth; and if the latter be examined, its mucous membrane, together with that of the fauces, will be found to present similar characters to the skin. On the fifth day the efflorescence appears upon the trunk of the body and upper extremities, and on the sixth on the lower extremities. The backs of the hands are the parts last affected; on these the eruption is retarded till the sixth, and sometimes till the seventh day.

The efflorescence of rubeola, therefore, makes its eruption at three distinct periods, on three different parts of the body, and on three successive days, the fourth, fifth, and sixth. In each region it pursues a course of three days, reaching its height on the second day and declining on the third; consequently its periods of decline are the sixth on the face and neck, the seventh on the trunk of the body and upper limbs, and the eighth on the lower limbs. On the ninth day the patches have become pale and yellowish, and during successive days continue still further to fade. They are followed by a copious furfuraceous desquamation of the epidermis and considerable itching.

I have already remarked that the cutaneous congestion of measles appears in the form of minute points, which are aggregated into crescentic and annular patches of small size, these red points being interspersed here and there with minute granular pimples, resulting from excessive congestion of individual papillæ. The characteristic form of the patches I conceive to be determined by some peculiarity in the distribution of the cutaneous nerves, and to be analogous to that appearance of the healthy skin, particularly of children, termed *mottled*. The patches of rubeola are raised very slightly above the level of the surrounding surface, and the skin itself is often tumefied, particularly in the face. Tumefaction is more conspicuous, however, in the mucous membranes, as of the conjunctiva; and the eyelids are frequently considerably swollen. The colour of the skin in rubeola vulgaris is a bright raspberry-red, disappearing under pressure with the finger, and subsiding into a yellowish red towards the close of the disease. Sometimes a crop of vesicles accompanies the eruption.

Of the constitutional symptoms of rubeola some are relieved and some aggravated by the appearance of the eruption. For instance, the nausea and sickness subside on the first outbreak of the efflorescence, while the sense of oppression and restlessness cease on the extension of the rash to the entire body. The coryza, catarrh, hoarseness, and cough, subside with the declination of the eruption, and the cessation of congestion of the mucous membrane of the bowels is indicated at about the ninth or tenth day by diarrhœa.

The participation of the mucous membranes in the congestion of the general surface is not merely evinced by the redness and tumefaction of the membrane of the eyeballs, the nose, and fauces, but is indicated during the progress of the disease by other signs, as by hæmorrhages from the nose, air-passages, and in females from the uterus. In girls at puberty the first menstruation sometimes occurs as an effect of measles.

Whenever the efflorescence of measles is checked in its course by cold or improper treatment the febrile symptoms are apt to become severe and even dangerous. In this state the congestion of mucous membranes is much heightened, the tongue becomes brown and dry, and the disturbance of the nervous system rises to delirium.

Rubeola, when it runs its course regularly, is a disorder of a mild and benignant type. But from the large surface of mucous membrane which is the subject of congestion, and the extent to which this membrane enters into the structure of the various organs of the body, it may fairly be inferred that it possesses the elements of dangerous results, and only needs the presence of the requisite conditions to develop the most serious consequences. Hence, an epidemic of measles is sometimes remarkable for the slightness of its attack and the mildness of its course; while another epidemic, under circumstances of difference scarcely appreciable, may be attended with more or less of malignancy or danger. One of the most serious of the after-consequences of rubeola is pneumonia, which usually terminates in serous infiltration of the tissue of the lungs, sometimes in purulent effusion, and more rarely in hepatisation. Pneumonia may occur either immediately on the decline of the eruption, or at the expiration of two or three days; it is denoted by the extreme difficulty of breathing which ensues, and by the livid hue of the lips and countenance. Pleuritis is also a dangerous but more rare sequela of measles, and terminates in effusion. A frequent sequela is the continuance of bron-

chitis, with mucous expectoration: occasionally the expectorated secretion becomes purulent; and less frequently lymph is deposited on the lining membrane, constituting croup. Œdema of the mucous membrane of the bronchial tubes and larynx is another dangerous affection consequent on rubeola, and in young children is liable to produce asphyxia from obstruction of the glottis. The debility of the tissues of the lungs left by measles is not unfrequently the predisposing cause of the subsequent development of scrofulous tubercles.

The inflammation of the conjunctiva, which is a common sign of rubeola, may continue after the subsidence of the eruption, merge into chronic ophthalmia, and give rise to ulceration of the eyelids. The inflammation of the Schneiderian membrane may, in like manner, be prolonged in a chronic form, and secrete a purulent fluid. The mucous membrane of the mouth and fauces may also be the subject of a continuance of the inflammatory process, producing aphthæ in young children, followed by troublesome ulcerations, thickening and ulceration of the lips in children a few years older, and mortification (cancrum oris) in some. In like manner enlargement of the tonsils and ulceration of these glands may also be present.

The appendages of the buccal cavity, namely, the sublingual, submaxillary, and parotid glands, may also suffer as a secondary effect of rubeola. These affections are exceedingly painful, from the unyielding nature of the fibrous coverings of the glands, and sometimes terminate in suppuration. Fistulous openings have occasionally been observed as consequences of abscess of the salivary glands.

The alimentary mucous membrane is also liable to suffer the secondary violence of rubeola; the diarrhœa, which so frequently proves the crisis of fever, may be prolonged as a chronic affection for a lengthened period, and be extremely difficult to repress, or issue fatally from ulceration of the bowel. Inflammation of the mucous membrane of the urinary passages is also an occasional and serious sequela.

The lymphatic system in an unsound, and especially in a scrofulous state of system, is also obnoxious to the secondary disorder of measles; enlarged glands in such subjects are by no means uncommon, and these are sometimes followed by abscess and ulceration. When the mesenteric glands are affected tabes mesenterica is liable to ensue.

The skin is not protected from the secondary disorders incidental to measles; cutaneous eruptions sometimes occur, and in a more deeply-seated inflammation of the tegumentary tissues boils are occasionally evolved.

RUBEOLA SINE CATARRHO.

It was observed by Willan, that during the prevalence of an epidemic of measles, certain cases occurred in which the disease was marked by absence of the affection of the mucous membrane, the cutaneous congestion presenting the ordinary characters of rubeola, and running the same course. To this form of morbillous affection the term rubeola sine catarrho is correctly applicable. Cases of this kind are by no means rare; they have been recorded by most authors, and are only interesting in a physiological point of view. Rubeola sine catarrho is not protective of the constitution against future attacks of measles; indeed, cases are not wanting in which it is the immediate precursor of rubeola vulgaris.

RUBEOLA SINE EXANTHEMATE.

As in the preceding instance, rubeola may be present without the inflammation of the mucous membrane constituting catarrh, so under analogous circumstances the latter may exist independently of the eruption. Cases of this kind occasionally occur, but they are undoubtedly rare. The conditions under which they present themselves are the same as in rubeola sine catarrho, affecting one member of a family, among whom rubeola prevails with its ordinary characters. Sydenham has recorded some instances of this form of measles, which he terms febris morbillosa, and similar cases have been noticed by De Haen, Gregory, and Guersent. As the febris morbillosa is but a partial affection of the system, it is not protective of the individual against the subsequent invasion of rubeola.

RUBEOLA NIGRA.

The conditions under which congestion of the capillary vessels may assume a venous tint I have already explained in preceding lectures. This change is dependent on reduction of nervous power, either by the violence of the disease, or by other causes acting on the system: hence it may be a sudden or a gradual change. It must always be serious, excepting in the case of local modification resulting from idiosyncrasy. Of the latter kind is the variety of "black or hæmorrhagic measles," noticed by Rayer, in which there was no constitutional debility. The efflorescence in this instance was vinous coloured, and failed to disappear under pressure with the finger. It was met with in strong individuals. But although such modifications as that instanced by Rayer may occasionally occur, they must necessarily be rare, in consequence of the partial nature of the nervous affection on which they depend. They will furnish us with no plea for disregarding the alteration of colour, which comes on suddenly in the progress of rubeola, and gives to the eruption the character which has gained for it the appellation of rubeola nigra.

Rubeola nigra is known by the purple and livid appearance which the efflorescence

assumes; this alteration of colour not being confined solely to the vessels, but extending into the surrounding tissues, in consequence of transudation of the sanguineous fluid through the coats of the capillaries. The effusion of the colouring principle of the blood gives to the skin a mingled tint of purple and yellow, and is often associated with petechiæ and ecchymoses.

Rubeola nigra is, happily, a rare modification of measles; the disease usually commences and progresses for some days as an ordinary case of rubeola vulgaris, when about the seventh or eighth day, a change is perceived in the colour of the eruption, which advances with rapidity. Coincident with this change is an extreme depression of the nervous powers; the patient suffers from lassitude and prostration; the pulse is quick and small; the respiration rapid and oppressed; there is frequent cough, nausea, and a parched state of the mouth. These severe symptoms are succeeded by effusion into the serous cavities and cellular tissues, delirium, and speedy death.

That which I have now traced is the most severe and dangerous course of the disease. There are cases of more moderate severity in which the patient, by good care, and after a long convalescence, may recover; but the change in its essential nature is dangerous, and requires to be closely watched. Even where recovery does take place the secondary effects of measles are to be apprehended.

Diagnosis. — Reviewing the history of rubeola, its invasion and course, you will distinguish its pathognomonic characters to be, primarily, the affection of the mucous membrane of the face and air-passages, as evinced in conjunctivitis, coryza, catarrh, and cough; and secondarily, the cresentic and annular form of the patches of the cutaneous efflorescence.

Roseola sometimes puts on the external characters of measles; and, as far as the cutaneous efflorescence is concerned, it is exceedingly difficult to distinguish them. It is true that there is a difference in tint of colour, roseola being deeper in hue than measles, but the crescentic form of the patches is precisely similar. In such a case we determine the diagnosis upon the presence or absence of precursory symptoms: in roseola there is little or no constitutional disturbance; the rash is the first indication of disorder, and there is consequently no conjunctivitis, catarrh, or cough.

Scarlatina is distinguished from rubeola by the bright scarlet of the eruption of the former, its uniformity of distribution, the angina by which it is accompanied, and also by the absence of coryza and catarrh.

Causes.—The cause of rubeola is a special contagion, probably originating in the association of a number of individuals under hygienic conditions unfavourable to health, and propagated to the present hour by generation of the morbid poison in the system of those affected by the disease. Like other contagions it is neutralised, or rendered active, by states of the atmosphere, being increased by cold and dampness of the atmosphere, and diminished by the opposite conditions, heat and dryness. Measles prevail consequently during the autumnal, winter, and spring months of the year, and principally in the former and latter, the dryness of the atmosphere which accompanies the sharp frosts of winter being unfavourable to its transmission.

Certain states of the system are favourable to the diffusion of rubeola, as, for example, the presence of inflammation of the mucous membrane of the air-passages; indeed, catarrh or cough may be regarded as indicating a morbillous constitution.

The infection of rubeola is a fact too well known to need any instances in proof, and the infecting distance would appear to be considerable. The period during which infection is possible is difficult to determine, but for the sake of security it is necessary to seclude the patient for at least three or four weeks. It may be as well to remember also, that subjection to an attack of this fever affords only partial security against its subsequent invasion: persons have suffered from measles as many as three or four times, and have still remained liable to its attack. The infectious nature of the fever is also exhibited in its epidemic prevalence.

The contagion of rubeola has been put to experimental proof by inoculating a sound person with the blood or fluids of the diseased. Dr. Home, Cullen, Speranza, and others, succeeded in producing an attack of measles in this manner, by inoculating with blood; Dr. Monro effected the same object by means of the tears and saliva; and Willan remarks "that the inoculation of the fluid of some accidental vesicles developed on the skin during rubeola communicated the disease, and was the means of transmitting it, subsequently, by infection to several other children. After inoculation the symptoms of the fever make their appearance in the course of a few days. At one time it was thought that the symptoms of the inoculated disease were milder than the sporadic form, and it was proposed to employ inoculation, as in small-pox, for the purpose of inducing a mitigated affection. The results of the experiments in the above cases were not, however, favourable to this opinion, and all expectation of benefit from such a mode of procedure has been relinquished.

When *hydatids* occur in muscles, they always, also, occur in, or on, the surface of the brain.—*Dr. Knox.*

LIEBIG,

HIS CHEMISTRY AND REVIEWERS.

BY

HENRY ANCELL, Esq.,

Lecturer on Medical Jurisprudence at the School of Anatomy and Medicine, Grosvenor-place, St. George's Hospital, and Surgeon to the Western General Dispensary.

No. IV.

LIEBIG's work contains matter on the subject of food, its uses, and the manner it is disposed of in the animal economy, perfectly novel to the literature of medical science in this country. My intention is to embody in the present paper the greater part of our knowledge of the chemical composition of

The Materia Alimentaria,

before entering into an explanation of Liebig's important contributions to this department of practical science, with the twofold object of exhibiting the present state of the subject, and of elucidating the author's views.

The particular substances employed as food in Great Britain are extremely numerous; they are derived from almost every region on the face of the globe; they vary in the greatest possible degree in their qualities, their chemical constitution, and their nutritive powers; they accordingly vary equally in the relations that subsist between them and the blood which they are destined to renovate. Although considerable labour and talent has been employed in efforts to determine their nature and constitution, a part of their number only has been submitted to investigation; and as respects the whole, much remains undone. Several most important discoveries have been made of late, leading us to regret that the subject has not been more zealously cultivated, and this, more especially, since it is now ascertained that either no principle at all, or erroneous principles, have hitherto been acted upon with respect to diet. It is only by an accurate acquaintance with the essential materials employed in the formation of blood, and transmitted by that fluid to the tissues, and with the laws of molecular action, vital and chemical, which regulate the metamorphoses of these materials, that we can hope to arrive at a knowledge of its nature, and of the interchange of atoms which must occur between the blood and the structures in the process of nutrition. It is upon this foundation only that we can determine the relations subsisting between the quantity and quality of the food of man, his available vital force, and the regular performance of his functions in the daily business of life; and upon this foundation alone can we hope to establish good dietetic principles, or rules for the safe conduct of convalescence after acute diseases, or for the treatment, hygienic or therapeutic, of man in his multifarious conditions, as regards the preservation of his health or the cure of his diseases.

Until very recently the whole force of chemistry was concentrated in an effort to isolate the proximate principles of animal and vegetable substances, and in determining the ultimate elements of those principles, without much regard to the atomic proportions of the elements, or to the important, although intricate, relations which subsist among them. In my last paper I alluded to the insufficiency of this method, if relied upon solely, but we have also to regret that the cultivators of it have followed no settled scheme, and that they appear, as a body, to have had no common object in view. Each individual has proceeded upon a plan, and for a purpose of his own, hence their results are a collection of isolated facts; there is no complete series of investigations to be found, and when the facts themselves are brought to one focus their utility is extremely circumscribed. These observations apply particularly to the

Analyses of Food,

the numerous articles of which are, for the most part, aggregates of the proximate principles here referred to. The first inquiry respecting food, in a scientific point of view, appertains to its proximate constitution, and I have accordingly collected from various sources all the most important of these kinds of analyses of the more common solid and fluid materials of our daily diet. An examination of the accompanying Table I. (A, B, C, D, E, F), will elucidate my remarks; it will convey to the reader a knowledge of what has been done in this department; it will show also how little, in a comparative point of view, has been effected, and how great a desideratum it is that a complete investigation of the materia alimentaria should be undertaken, with the settled object of determining, as far as the state of the science will admit of, all the constituent principles of food, and the modifications in the nature and proportions of these principles to which it is subject under a variety of circumstances.

Remarks on the Table of Proximate Analyses.

I have followed, as literally as possible, the statements made by operative chemists themselves of the substances found by them in their examinations of organic products: these substances are extremely numerous, and many of those bearing the same name, but derived from different sources, are of uncertain identity. Thus, many of the volatile oils, resins, and extractives, have, in all probability, a specific constitution; many of the so-called proximate principles are decidedly products resulting from the pro-

cesses of analysis adopted, as in the case of various salts, which are converted into the form in which they ultimately appear by the process of combustion or incineration, resorted to for the purpose of separating them from the more volatile materials; others have no real existence, or, at all events, there is a great difference of opinion amongst chemists as to their existence; thus, hordein and pectic acid are not mentioned in some of the latest works on chemistry. In the processes employed for the purpose of eliminating individual principles, as before remarked, no uniformity has been observed; thus, the oatmeal analysed by Vogel must have been in a much moister state than the specimen of wheat-flour by Vauquelin,—a circumstance which detracts from any inference which might be drawn as to the relative nutritive powers of these two substances. Sometimes the products of actions which take place in organic substances after death, have been represented as proximate principles; thus, mannite has been put down as a constituent of onion juice, but this juice runs very rapidly into the viscous fermentation, and mannite is formed at the expense of the common sugar. Principles found by one individual are not found by others, owing very probably in many instances to real differences in the plants, or their juices, resulting from age, culture, season, climate, or soil; but in other instances to faults or differences of opinion appertaining to the operators themselves. There are many circumstances connected with these proximate analyses which it is impossible to reduce to a tabular form. It should be stated that the wheat-flour analysed by Vauquelin was previously separated from the bran; in the oats which furnished the meal for analysis by Vogel, the proportion of bran was 34 to 66 farina; in the barley by Einhoff—

Bran	18.75
Water	11.20
Farina	70.05
	100.

In the rye by the same chemist, nearly—

Bran	24.22
Water	10.19
Farina	65.59
	100.

It is necessary to take account of this in estimating the nutritive qualities of grains. Liebig states (Veg. Chem., p. 79) that the proportion of azotised matter or gluten in different kinds of foreign wheat differs from 3.33 to 26.7 per cent. The gum of wheat differs from common gum in colour, and it also contains a small portion of azote. Cocoa contains theobromine, an azotised principle. Pelletier found a small portion of sugar in coffee, and Runge and Pfaff a peculiar caffeic acid, as well as tannic acid, also caffeates of lime, magnesia, alumina, and iron. Strawberries are not included in the table, but they contain malic and citric acids, and a peculiar volatile substance. Horseradish contains sulphur. A fibrinous material nearly allied to fungin is found in the rind of the cucumber, but this is not properly an article of diet. Some vegetable substances are omitted as consisting entirely of a single proximate principle; thus, arrow-root, sago, and salop, are nearly pure starch.

Among the animal substances it is necessary to notice that a peculiar principle was extracted by Couerbe and others from the albumen of an egg. Animal fats are composed for the most part of elaine and stearine, thus—

	Elaine.	Stearine.	
Hog's-lard	62	38	= 100
Beef-suet	25	75	= 100
Goose-fat	68	32	= 100
Duck fat	72	28	= 100
Turkey-fat	74	26	= 100

Hog's lard may also be regarded as a compound of stearic and oleic acids 94.65 + glycerin 9, and by saponification the other fats may be separated into various proportions of the same constituents; the more solid material of goose-fat is margarine. Again, the composition of brain is nearly but not quite identical with that of nerves; and it may be remarked, that animal flesh employed as food must always contain more or less of nervous and vascular structure. Brain contains a peculiar oleophosphoric acid with nearly two per cent. of phosphorus.

I must refer those who wish to become acquainted with all the details of this subject to the various works extant upon organic chemistry, and in particular to the volumes by Dr. Thomson of Glasgow, to that just published by Liebig and Gregory, and to Berzelius's writings, since it is totally impracticable to comprise the whole in these papers.

TABLE I.

contains all the more important proximate analyses of food collected from the 6th and 7th vols. of Berzelius's "Traité de Chimie," and other sources. Analyses by definite quantities, where the proportions are given, have always been preferred to simple qualitative analyses. + Indicates that the particular proximate principle or substance in the horizontal line against which it stands, is found in the article of food in the perpendicular column with which it corresponds. — Indicates that the quantity to which it is appended is in excess, some other material in the column being included; thus, in Braconnot's analysis of the bullock's heart, 77.03— includes both water and loss, a + representing the loss. A, B, C, vegetable substances; D, E, animal substances; F common water and culinary salt.

A	Wheat farina (Hard Odessa).	Wheat farina (Soft Odessa).	Wheat farina (Hospital best).	Wheat farina (Hospital 2nds).	Barley.	Malt.	Pease.	Garden beans.	Kidney-beans, dried.
	Vauquelin.				Proust.		Einhoff.		
Water	12.	12.	8.	12.			14.06	15.63	
Veget. fibrin or gluten	+ ?				3.	1.			
—— albumen	+ 14.55	7.30	10.30	9.02			1.72	.81	1.35
—— casein or legumine.							14.56	10.86	20.81
Gum	4.90	3.30	3.60	4.60	4.	15.	6.37	4.61	19.37
Starch	56.50	72.	71.20	67.78	32.	56.	32.45	34.17	35.94
Amylaceous fibre							21.88	15.89	11.07
Hordein					55.	12.			
Sugar	8.48	5.52	4.80	4.80	5.	15.	+ ?		
Resin					1.	1.			
Extractive							+ 2.11	3.54	3.41
Colouring matter									
Woody fibre	2.30								
Husk, bran, and epidermis								10.05	7.50
Acid, malic									
—— citric									
Salts								3.46	.55
Phosphate of lime	+	+	+	+			.29		
—— magnesia	+	+	+	+					
Lime									
Insoluble matter and loss	1.27		2.1	1.8			6.56	.98	
	100.	100.	100.	100.	100.	100.	100.	100.	100.

B	Cane-juice (Brande).	Sweet Almonds (Bouillay).	Nutmeg (Bonastre).	Mustard (John).	Pollen, &c., of Hops. (Payen, &c.)
Water	+	3.5			
Veget. fibrin or gluten	+				Azotised substance.
—— albumen	+	24.		+	
Gum	+	3.	1.2	+	+
Mucilage	+		2.4		Salts of ammonia, iron and oxide.
Sugar	+				
Resin				+	+
Extractive				+	
Fatty matter					+
Fixed oil	Col. matter	54.	31.6	+	
Volatile oil			6.	+	$\frac{2}{100}$
Lignin	+		54.	+	
Woody fibre		4.			
Caffein					Lupuline.
Acid, acetic	+	.5			
—— malic	+	Husk.			+
—— tannic		5.			+
Alk. and earthy sulphates	Sulph. of lime.				+
Sulphate of potassa					Bitart. of potash.
Phosphate of lime					Tart. of lime.
Acetate of potassa	+				+
—— lime	+				+
Malate and superm. pot.					+
—— lime	+				+
Pecul. and anon. principles				+	+
Insoluble matter and loss					Sulphur.
	+	100.	96.	+	+

	Pears, green.	Ditto, ripe.	Cherries, green.	Ditto, ripe.	Apricots, green.	Ditto, ripe.	Gooseberries, green.	Ditto, ripe.	Peaches, green.	Ditto, ripe.	Greengages, unripe.	Ditto, ripe.
	Bérard.											
	86.28	83.88	88.28	74.85	89.39	84.49	86.41	81.10	89.30	74.87	74.57	71.10
	.08	.21	.21	.57	.76	.34	1.07	.86	.76	.17	.45	.28
	3.17	2.07	6.01	3.23	4.10	4.47	1.36	.78	4.10	5.12	5.53	2.06
	6.45	11.52	1.12	18.12	tr.	6.64	.52	6.24	tr.	16.48	17.71	24.81
	.08	.01	.05		.04	.01	.03		.04		.03	.08
	3.80	2.19	2.44	1.12	3.61	2.53	8.45	8.01	3.61	1.86	1.26	1.11
	.11	.08	1.75	2.01	2.70	2.30	1.80 .12	2.41 .31	2.70	1.80	.45	.56
	.03	.04	.14	.10	tr.	tr.	.24	.29	tr.	tr.	tr.	tr.
	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.	100.

	Wine.	Beer.	Green Tea.	Black Tea.	Coffee, raw.	Ditto, roasted.	Cocoa-nut fluid (Brande).	Cocoa kernel (Do.)
			Frank.		Schroeder.			
	+	+			10.57		$\frac{88}{100}$	$\frac{45}{100}$
		+	5.7	6.3				+
							$\frac{2}{100}$	
	+	+			3.64	10.42		
			5.9	6.3				
	+	+						+
	+	+			.41	+	+	+
					.62	4.80	+	+
	Colouring matter.							+
		Starch.			.52	+ 2.03		
	+		+	+				
			51.3	44.8				
		Lupuline.			66.66	68.75		
			+	+	+	+		
	+	+						
	+	Phosphoric acid.	34.6	40.6			Malate of magnesia. tr.	Sulph. of lime.
	+	Tartaric acid.						+
		+					+	+
	Alumina.	Phosp.-magn.						+
		Alcohol.						
		+	+	+	17.58	12.50		
			2.5	2.		1.45		
	+	+	100.	100.	100.	100.	+	+

C	Carolina rice. (Braconnot.)	Piedmont rice. (Braconnot.)	Rye-meal (Einhoff).	Oatmeal (Vogel).	Barley-meal (Einhoff).	Linseed (Mayer).
Water	5.	7.	Moist.	23.95	9.37	
Vegetable fibrin or gluten	+		9.48	+	+	2.932
—— albumen	+ 3.6	3.6	3.27	+ 4.30	+ 4.67	2.782
Azotised substances						
Gum	.71	.10		2.50	4.62	6.154
Mucilage			11.09			15.12
Starch	85.07	83.8	61.09	59.	+ 67.18	1.48
Amylaceous fibre						
Hordein					+	
Sugar				+ 8.25	5.21	+
—— uncrystallisable	.29	.05	3.27			2.488
Resin						
Extractive matters				+		+ 10.884
Fatty matter						+
Fixed oil	.13	.25		2.		+ 11.265
Volatile oil					+	
Colouring matters						.550
Woody fibre	4.8	4.8			+ 7.29	
Husk, bran, and epidermis			6.38			44.382
Pecul. and anon. principles						
Acid, acetic	tr.					+
—— malic						
—— pectic						
—— phosphoric						Tannic acid .926
Salts						
Alk. and earthy sulphates						
Sulphate of potassa						+
—— magnesia						
—— lime						+
Alk. and earthy phosphates						
Phosphate of potassa	+	+			+	
—— lime	+	+				+
—— magnesia					+	+
Alk. and earthy chlorides						
Chloride potassium	+	+				+
—— calcium	+	+				
Bitartrate of potassa						
Acetate of potassa						+
—— lime						
Malate and superm. potass.						
—— lime						
Citrate of potassa						
—— lime						
Carbonate of lime			+	+		
—— magnesia			+	+		
—— potassa						
Veg. acid with potass	+	+				
—— lime	+ .4	+ .4				
Phosphate of iron			Ashes of plant (Schroeder).	Do. (Do.)	(Fourcroy, Vauquelin, and Thomson.) Nitrate of soda.	
Chloride of iron						
Wax						
Odoriferous principles						.146
Iron and its oxide			+	+	+	
Mang. and its oxide			+	+		
Alumina			+	+		
Silica			+	+	+	+
Insoluble matter and loss			5.42		1.42	.891
	100.	100.	100.	100.	100.	100.

Indian corn (Bizio).	Pease (Braconnot).	Potatoes (Vauq.)	Potatos (Einhoff).	Beet-root (Payen).	Carrot (Vaugelin).	Jerus. artichoke (Braconnot).	Onions.	Asparg. (Dulong).	Horseradish.	White ginger (Bucholz).	Ash of do. (Morin)	Cucumber John.	Lemon-juice. Proust.	Grape-j., ripe.	Do. unripe.	Cane-juice.
	12.5	+	75.	+	+	77.2	+		+	11.90		97.14	97.51			
5.758	18.4	+		+	+		+							+		
zein or gluten.	+	+	1.40	+				+	+			.13	+			+
2.283	+ 8.	+	4.1			1.08			+	12.50				+		+
							+			8.30		.53				
80.920	42.38	+	15.						+							
	1.06	+	7.							Bassorin 19.75						
7.710				8/100			+		+		+		+			+
.895	+	+			+	14.8				3.60				+	+	+
1.092	+ 2.	+		+	+			+	+	11.15	+	1.66	+			+
+ .323		Asparagin 1/100				.06	+									
	1.2			+	+			Asparagin.	+	1.56		.04				+
Zinome.					Carot. +	1.22				Lignin 8.	+					
.945	8.26	+		+	+	.99		+	+							
+				+	+	Inulin 3.		Citric acid.	Volat. acrid oil.				+ .72			
+	4.	+	5.1			.12					+	+	Citric acid 1.77	Citric acid	+ Do.	+
					.06	.06	+							+	+	+
	1.93	+		+		.14	+	+		Apothem or deposit soluble in potass 26.	+	.53				
						.08		+								
						Tartrate of lime. 0.07		+								
						.03		+								
		+				1.07	+									
	0.7	+				.08										
	+										+					
						.03	Sulphur.					.5				
											+					
						.12					+					
+ .074											+					
100.	109.	+ +	107.6	+	+	100.15	+	+	+	103.76	+	100.53	100.	+	+	+

D	Cow's milk before lactation (Boussingault and Le Bel.)	Cow's milk after lact. (Do. do.)	Milk (Berzelius).	Human milk (Henry and Chevalier).	Human milk (No. 1) (Meggenhofen).	Human milk (No. 2) (Do.)	Ashes of 1000 parts human milk (Pfaff and Schwartz).	Asses' milk (Henry and Chevalier).	Cow's milk (Do. do.)
Water	78.4	87.1	+	87.98	87.25	78.93		91.65	87.02
Animal fibrin	+								
—— albumen									
—— casein	+ 15.1	3.4	+	1.52	2.41	2.88		1.82	4.48
Gelatin									
Osmazome									
Extractives			+						
Membrane									
Nervous matter									
Nitrogenous matter									
Phosphoric oily matter									
Cholesterine									
Mucus				+				+	+
Sugar of milk	3.6	5.4	+	6.50	+ 1.14	+ .88		6.08	4.77
Oil or fat									
Butter	2.6	4.	+	3.55	+ 9.13	+ 17.12		.11	3.13
Pecul. and anon. prin.			+						
Colouring matters									
Free acid					+	+			
Lactic acid			+ Seral						
Combust. acid c. pot.									
Salts	.3	.2		.45	+ +	+ +		.34	.60
Alk. and earthy lactates									
Lactate potassa			+						
—— soda			+						
—— lime			+						
—— magnesia			+						
—— ammonia			+						
Alk., &c., phosphates									
Phosph. potassa			+						
—— soda			+				.4		
—— lime			+				2.5		
—— magnesia			+				.5		
Alk., &c., chlorides									
Chloride potassium			+				.7		
—— sodium			+						
—— ammon.									
Alk., &c., carbonates									
Carb. lime									
—— potassa									
—— soda									
—— magnesia									
Amm.-magn. phosph.									
Phosphate of iron			tr.				.007		
Alk., &c., sulphates									
Sulph. potassa			+						
Oxide of iron									
Lime									
Magnesia									
Potassa									
Soda							.3		
Sulphur									
Phosphorus									
Loss									
	100.	100.	+	100.	99.93	99.81	4.407	100.	100.

Cow's milk (Do. do.)	Solid part of beef (Berzelius).	Liquor of beef-desh (Do.	Flesh of smelt (Morin).	Parenchyma of ox-liver (Braconnot).	Calves' brain (John).	Oysters (Pasquier).	Isinglass (John).	Yolk of egg (Prout.)	White of egg (Bostock).	Cheese (Berzelius).	Beef-muscle Do.	Bullock's-heart (Braconnot).	Milk (Lecanu).	Roe of pike (Vauquelin).	Blood of animals.
87.02	77/100	+	+	68.64	75.80		7.5	53.78	85.		77.17	77.03—	868.		+
	+ 17/100	+	+	20.19						+	17.74	+ 18.18		+	+
4.48		+	+		10.	+		17.47	12.		2.20	1.70		+	+
	+		+			+	70.			+			56.		
	+		+		+	+	16.?				1.80	1.94			
	+			6.07		+	2.5		+	+	1.05	.15	+		
			+	3.89						+		+		+	Cereb. +
+						+			2.7					+	+
4.77				?	+			28.75		+			+		
3.13	Zomodine. +												40.	+	Hæm +
						+	4.				+	+	36.		
.34				.1											
.60	+	+			+	+			.3		+	+	+		Seroline. +
	+	+				+								+	
	+	+												+	
		+												+	
		+												+	
		+												+	
		+		.47		+				6/100	.08			+	
		+		.64										+	
		+												+	
		+							tr.					+	
		+				+		+	+					+	
		+						+	+					+	
		+						+	+					+	
							6/1000	+	6/1000					+	
								+	+					+	
								+	+					+	
								+	+					+	
								+	+					+	
								+	+	6/100				+	
								+	+					+	
								+	+					+	
								+	+					+	
								+	+					+	
								+	+

E	Beef muscle,	Chicken flesh.	Cod-fish.
	Brande.		
Water	74.	73.	79.
Animal fibrin	} 20.	} 20.	} 14.
——albumen	}	}	}
Gelatin	6.	7.	7.
	100.	100.	100.

F	Thames water.	Colne water.	Culinary Salt, St. Ubes.	Do., Cheshire.	Do., Lymington.
	R. Phillips.		Henry.		
Water	69980.24	69977.94			
Chloride sodium	}	}	960.	983.5	937.
—— calcium	}	}	tr.	.25	
—— magnesium	}	}	3.	.75	11.
Sulphate of lime	} 3.4	} 2.5	23.5	14.5	15.
—— magnesia	}	}	4.5		35.
Carbonate lime	16.	19.3			
Iron	}	}			
Silica	} tr.	} tr.			
Manganese	}	}			
Insoluble matters	.36	.26	9.	1.	2.
	70000.	70000.	1000.	1000.	1000.

Notwithstanding the imperfections of this department of science great importance has attached to these proximate analyses, and if they were completed with all the accuracy which chemistry now admits of they would be invaluable; they are serviceable, in the first place, by enabling us to trace the sources from which are derived particular organic compounds essential to nutrition and to the continuance of life, or of certain elements which become assimilated in organic structures; and, in the second place, by furnishing us with definite compounds of the elements of matter which are concerned in organic life, by the isolation of which compounds and the study of their composition, atomic relations, and metamorphoses, we hope to attain an insight of the nature of the vital processes: for it is Liebig's opinion founded, I believe correctly, that a knowledge of the ultimate constitution of these proximate principles, and of all the materials which are received into and are separated from the living body, must constitute the foundation upon which the chemistry of living systems is to be reared. By reference to the foregoing analyses we may ascertain from what particular articles of diet, fibrin, or starch, or phosphate of lime, or iron, is derived; but in order to comprehend the molecular changes which these substances undergo in the animal economy, until their final elimination in the forms of carbonic acid, water, and urea, or otherwise, and in order to learn what purposes they fulfil in the progress of these changes, we must possess an intimate acquaintance with their atomic constitutions.

The Ultimate Elements of Food.

The determination of the ultimate elements of the proximate principles contained in animal and vegetable matters, has for a long time past, been a favourite undertaking with chemists. Notwithstanding a great degree of accuracy had been attained, very little advantage resulted from the mere discovery of the proportions of these elements in 100 parts. It was not until the equivalent ratios in which they are united were attended to that any prospect of an insight of the real nature of the chemical changes which occur in organic compounds, could be expected. Dr. Ure, adopting the method with oxide of copper introduced by Gay Lussac, was amongst the earliest of the chemists, who paid attention to these equivalent ratios. In his paper in the "Philosophical Transactions" for 1812, not only are the proportions in 100 parts of the constituents of numerous organic principles ascertained, but the number of atoms are also determined; although in the progress of the science the views then entertained respecting the atomic constitution of the same substances have been greatly modified, and the use of symbols has been in-

Table II.

The Ultimate Elements *of the more important Proximate Principles and other Constituents, Solid and Fluid, of* Organic Substances employed as Diet.—(From Liebig, Mulder, Scherer, Fremy, and others.)

	Carbon.	Hydrogen.	Nitrogen.	Oxygen.	Sulphur.	Phosphorus.	Ashes and Salts.	Formulæ.
Proteine	55.742	6.827	16.143	21.228	(Sy. Pr.)			$C_{40}H_{35}N_6O_{14}$
Fibrine, animal	54.56	6.90	17.72	22.13	0.33	0.36	+	Pr+P+S+ salts.
Albumen do.	54.84	7.09	15.83	21.23	0.68	0.33	+	Pr+P+S+ salts.
Caseine do.	54.96	7.15	15.80	21.73	0.36		+	Pr+P+S+ salts.
Fibrine, vegetable	53.064	7.132	15.359	24.445	.+	.+	+	Pr+S+P+ salts.
Albumen do.	54.74	7.77	15.85	21.64	.+	.+	+	Pr+P+S+ salts.
Caseine do.	54.138	7.156	15.672	23.034	+		+	Pr+S+ salts.
Gelatinous tissue	50.048	6.477	18.350	25.125				$C_{48}H_{41}N_7O_{15}$
Chondrinous tissue	50.607	6.578	14.437	28.378				$C_{48}H_{40}N_6O_{20}$
Arterial membrane	53.91	6.96	15.60	23.53				$C_{48}H_{38}N_6O_{16}$
Flesh and blood	51.96	7.25	15.07	21.30			4.42	$C_{48}H_{39}N_6O_{16}$
Cerebric fatty acid	66.7	10.6	2.3	19.5		0.9		$C_{192}H_{188}N_2O_{42}P$
Hæmatosin	64.57	5.25	10.54	12.97			Iron 6.67	$C_{44}H_{22}N_3O_6Fe$.
Starch	44.91	6.11	..	48.98				$C_{12}H_{10}O_{10}$
Gum	42.58	6.37	..	51.05				$C_{12}H_{11}O_{11}$
Cane-sugar	42.301	6.384	..	51.315				$C_{12}H_9O_3+2HO$
Sugar of milk	40.	6.73	..	53.27				$C_{24}H_{24}O_{24}$
Grape-sugar	36.71	6.78	..	56.51				$C_{12}H_{14}O_{14}$
Lignin, dried	49.80	5.58	..	44.62				$C_{12}H_8O_8$
Glycyrule (hy. rad.)					(Symb. Gl.)			C_6H^3
Glycerine	39.132	8.436	..	52.432	(Symb. Gly.)			$C_6H_8O_6$
Stearic acid	79.85	12.55	..	7.60	(Symb. St.)			$C_{66}H_{66}O_5$
Oleic acid	80.942	11.359	..	7.699				$C_{44}H_{39}O_4$?
Margaxic acid	78.38	12.59	..	9.03				$C_{34}H_{33}O_3$ or $C_{68}H_{66}O_6$
Butyric acid	63.62	7.01	..	30.17				$C_8H_8O_2$
Caproic acid	68.33	9.	..	22.67				$C_{12}H_{12}O_3$
Capric acid	74.	9.75	..	16.25				$C_{18}H_{18}O_3$
Stearine	78.776	11.770	..	9.454	Ration. form.			2 St+Gly O+2 HO
Elaine	74.792	11.652	..	13.556				
Margarine	82.108	13.794	..	4.168	(Symb. Mr)			$C_{33}H_{33}O$
Cholesterine	85.095	11.880	..	3.025				$C_{36}H_{33}O$ or $C_{36}H_{32}O$
Wax	81.15	13.75	..	5.09				$C_{36}H_{36}O$
Caffeine	49.796	5.082	28.832	16.288				$C_{16}H_5N_2O_3$
Asparagine	32.85	6.60	18.73	42.32				$C_8H_8N_2O_6+2HO$
Theobromine	46.43	4.20	35.85	13.51				$C_8H_4N_2O_2$
Piperine	70.58	6.48	4.12	18.82				$C_{34}H_{19}NO_6$
Oil of cinnamon	81.80	6.67	..	12.03				$C_{20}H_{12}O_2$
—— mustard	49.53	5.02	13.45	11.74	20.26			$C_8H_5NS_2$
Caryophyllic acid	69.36	7.52	..	23.12				$C_{20}H_{12}O_4$
Stereoptene								$C_8H_{16}O_2$
Acid, acetic	40.00	6.67	..	53.33				$C_6H_7O_6+HO$
—— citric	41.38	3.45	..	55.17				$C_{12}H_6O_{11}$
—— malic	41.38	3.45	..	55.17				$C_8H_4O_6+2HO$
—— tartaric	36.36	3.03	..	60.61				$C_8H_4O_{10}+2HO$
—— lactic	44.90	6.11	..	48.99				$C_6H_4O_5+HO$
—— oxalic	28.9	..	..	61.1				C_2O_3
—— tannic	51.79	4.12	..	44.09				$C_{12}H_4O_9+3HO$
—— racemic	36.36	3.03	..	60.61				$C_8H_4O_{10}+2HO$

troduced. The importance of both these plans of investigation, viz., proximate and ultimate analysis, is enhanced in an incalculable degree by their subserviency to the rigid quantitative method of the German school, by the discovery of compound radicles, and by the use of rational formulæ. But as respects organic chemistry in general, and the materia alimentaria in particular, these plans are at present very imperfectly carried out, although some most useful discoveries have resulted from them; that of proteine may be given as an example.

Table II. contains

the ultimate analyses of all the more definite compounds met with in Table I.; the composition in a hundred parts, according to the original plan of recording these analyses, is first given, and then the rational and empirical formulæ, with a few symbols; the formulæ are nearly all derived from the work before us, and from Liebig's and Gregory's Chemistry, just published. It will be found that the proportions in 100 parts do not always accord with them; in fact, although the latter must be derived from the former, the original analyses are dropped in the work just quoted altogether, and I have accordingly obtained them from other sources. One great cause of discrepancy between the two is found in the different proportions of hydrogen and oxygen remaining in combination or mixture with the original substance when the analysis is made; thus, lignin or starch, with an additional atom of water, would furnish different proportions of elements in 100 parts. This circumstance must be fully comprehended in order to reconcile apparent inconsistencies in the results of different experimenters; the rational formulæ in many instances explain these discrepancies away. In the empirical formulæ of fibrin, albumen, and casein, S and P are not regular established equivalents.

The Blood contains

twelve at least of the simple or undecompounded elements of matter, and by reference to the two Tables before us we have a distinct clue to the origin of the whole of them in the constitution of our food, the oxygen, hydrogen, carbon, azote, sulphur, and phosphorus, being component parts of animal and vegetable fibrin, albumen, and casein, are furnished for instance by meat, bread, eggs, milk, some vegetable juices, and bones. Sodium and chlorine is derived from culinary salt,—also from eggs and water; iron from water, most vegetable substances, as the cærealea, potatos, ginger, asparagus, milk, &c.; calcium from water, salt, and many animal and vegetable substances; potassium from milk, fish, and rice; and magnesium from salt, wheat-flour, barley-meal, &c.; silica and manganese which occur in some of the tissues, are introduced into the system with water, the cærealea, and even cucumbers. The only apparent exception is in the case of fluorine, which, according to Berzelius and other chemists, is a component part of the teeth.

Hitherto, any attempt to ascertain the quantity of the elements or of the more complex principles derived from the food, and employed in the formation of blood, or in the construction of the tissues, would have been regarded as Utopian; but Liebig and his school have shown that the determination of these important points is quite practicable; the instances referred to in his work relate more especially to the quantity of carbon ingested, and I shall have to examine that subject closely in a future paper; in the mean time our purpose will be served by the following

Illustration.

Let us suppose a child to be fed for six months upon breast-milk alone; we know that iron is absolutely essential for the formation of blood. If the blood have not a due proportion of that mineral, healthy nutrition and aeration cannot proceed; the only known source of iron in this instance is the mother's milk, and according to Pfaff's analysis (Table I.), it contains only a .007th part of the phosphate, which, on a cursory view, would appear to be an inadequate quantity.

But allowing twelve ounces of milk upon an average as the daily diet, a little more than 10 grains of phosphate of iron would be received into the alimentary canal with the food in six months. This is equivalent to about 5.8 grains of oxide of iron, which, again, is equivalent to about 4½ lbs. of blood.* Suppose the child to increase 4 lbs. in weight during the six months, and that a pound of this additional weight consists of a permanent increase of the quantity of blood in the system; for the formation of this one pound of blood not more than 1.2 grains of the oxide of iron is required; the remaining 4.6 grains contained in the milk may be deposited in the structures, or eliminated in the secretions or excretions.

Iron being one of the most permanent and settled constituents of the blood, employed only in the most minute quantities in the nutrition of any of the tissues, and it being doubtful whether, in an infant nourished only on breast-milk, it leaves the body at all after it forms a part of the blood; it appears to be clearly demonstrated that the quantity above indicated as a constituent of human milk is abundantly sufficient to answer all the purposes of the economy at this period of life.

But let us suppose that from any cause whatever the milk of a particular individual contained a much smaller proportion of iron

* Lectures on the Blood, Lancet, 1839-40, vol. i., p. 316.

than here represented—say $\frac{1}{10}$th part of this proportion. In such a case the child would receive from its mother barely enough iron in six months to form 7½ ounces of perfect blood, allowing nothing for waste, or for any portion of the metal which might be employed in the building up of the tissues; it is impossible to conceive that so small a proportion of iron would be consistent with health and progressive growth.

Can it be said that the mother's milk is never deficient in its proportion of iron; of potassium; of phosphorus or other elements? Have diseases been referred to their proper causes, and have the most probable causes been yet investigated? There are

Other Applications to be made of the Tables accompanying this Paper,

which would be of the utmost importance in physiology and practice if they were rendered more perfect. In Berzelius's celebrated analysis of urine we find a thousand grains of this fluid is represented as furnishing 3.71 grains of sulphate of potassa. Suppose a man to void 40 ounces per diem, the quantity of sulphate of potassa would amount to 71 grains, equivalent to more than 32 grains of potassium; but half of this secretion may be referred to the ingesta of simple watery fluids, and we will reduce the proportion of the salt in the remainder to one-half, which leaves eight grains of potassium as being derived from the food in one day; but where, in the analytical tables, is so large a quantity of potassium to be found? The analysis in question cannot, I think, be a fair standard of comparison in this country at least, so far as the salts of potassa are concerned, and there was probably some peculiarity in this respect in the diet of the individuals whose urine Berzelius examined.

As to the action of material particles in the animal economy, no exception, by virtue of minuteness of quantity, can be taken at this time of day to our reasonings.

Protein, which appears in the Second Table as a Proximate Principle,

is a definite compound of the four elements, oxygen, hydrogen, carbon, and azote, and it forms the common basis of the most important constituents of animal and vegetable matters enumerated in the first table, viz., fibrin, albumen, casein, gluten, or vegetable fibrin, and legumin, or vegetable casein. It is a substance which, notwithstanding its complex nature, is capable of entering into combination with other more simple chemical compounds, and even with the elements of inorganic matter, according to the laws of definite proportions; and in consequence of the number of atoms which enter into its constitution its equivalent must be very high indeed. Hence it is found that the minutest quantity of the elements or of the more simple bodies, combine with several thousand times their weight of protein to form new definite compounds possessed of specific properties and fibrin, also the other organic substances above named are actually chemical combinations of this kind. The discovery of protein by Mulder, which is turned to the most valuable account in Liebig's "Animal Chemistry," must be extremely gratifying to Dr. Prout, who has taken so much interest, and done as much, if not more, than any other chemist of this country in organic analysis.

In the "Philosophical Transactions" for 1827, Dr. Prout quotes the following observation from Herschell:—"That such minute proportions of extraneous matters should be found capable of communicating sensible mechanical motions and properties of a definite character to the body they are mixed with, is perhaps one of the most extraordinary facts that has yet appeared in chemistry." At this early period Dr. Prout was satisfied that the earthy and alkaline salts, iron, &c., are not as they were then generally believed to be, mere mechanical mixtures accidentally present, but that they perform the most important functions; the discoveries of the German school have fully confirmed the truth of this observation.

So long as the subject of the chemical composition of food continued to be one of philosophical speculation only, the circumstances referred to in this paper and others which had a retarding influence over its progress, might perhaps be regarded as of trivial importance; but it will appear before my present undertaking comes to a conclusion that this kind of knowledge is practically available, especially but not only in medicine. When it is known for a certainty, with regard to

Articles of diet,

that one loaf of bread as compared with another of equal weight, may contain double the amount of the materials that are most essential to nutrition; that some articles of diet are nearly, and others absolutely, destitute of organic principles capable of supporting for any length of time the vital force; that different varieties of food subserve different purposes in the animal economy; that various vegetable substances, furnished abundantly by nature, but not at present employed as food, contain nutritive principles, and that the chemist is capable of ascertaining these substances and of determining their relative proportions; that the use of tea, coffee, and chocolate, cannot be replaced by gruel, arrow-root, and starchy diet with the same effects upon the economy, and that cookery comprises a number of most interesting and important chemical processes;—when the importance of these circumstances becomes duly appreciated, doubtless the cultivators of chemical science will meet with more encouragement

than heretofore in this country. Not only will the medical practitioner and the agriculturist avail himself of a knowledge of organic chemistry in his particular vocation, but the magistrate, the guardian of the poor, and the legislator, must appeal on the gravest questions to the chemist for that knowledge which is alone calculated to ensure the success of his philanthropic exertions.

I may appear to have travelled somewhat out of the way of a review of Liebig's Chemistry in this paper, but it is absolutely essential to have the matter herein contained before us, in order to comprehend and examine many of his statements respecting digestion, nutrition, and the evolution of animal heat.

CASE OF

PUERPERAL MANIA,

WITH THE POST-MORTEM EXAMINATION.

By RICHARD R. PERRY, Esq., House-Surgeon to the General Lying-in Hospital, York-road, Lambeth.

Mrs. ROBERTS, 4, Dyer-street, William-street, Blackfriars-road, aged 34, was delivered by a midwife of her seventh child, on the 1st of November last, after three days' labour. The pelvis was deformed, and forceps had been applied and craniotomy performed, in previous labours, yet she refused to have premature labour brought on, which had been repeatedly recommended to her. The consequence was, that this and every child had been still-born, with the exception of one, a girl, very small, which is now alive.

On the third day after delivery, Nov. 4, after a sleepless night, she complained of pain in the head and abdomen, and became restless and delirious. I was then sent for, and found her extremely violent, requiring two women to hold her. The pupils dilated, unaffected by a lighted candle; skin hot and moist; pulse 120, quite silent; winced on pressing the abdomen. The bowels had been freely opened on the day before by castor-oil. I ordered her laudanum, in saline mixture, every two hours, but they were only able to give her thirty minims (three doses).

Same day, noon. Pupils contracted; skin cool; more violent than before; and taciturnity had given way to violent delirium; pulse 120, small and feeble.

Five, p.m. Dr. Cape saw her; she was then incoherent, talking without intermission; pulse more feeble; surface of body cold; pupils still rigidly contracted; pain on pressing uterine region, but not acute. A blister to nape of neck, and half a grain of acetate of morphia every hour till sleep was produced.

Eleven, p.m. Has taken three powders; perfectly quiet; rambling ceased; much less jactitation, but no sleep; pulse a little firmer; pupils still contracted. The strength was supported by gruel and brandy during the night, but the restlessness came on again, and she sank at eight, a.m., on the morning of the 5th, just twenty-eight hours after the attack.

In her delirium she spoke of her husband having had connection with her since her delivery; and the uterus having been felt by two married sisters after her death, above the pubis, was thought by them to corroborate it, having been, as they termed it, pushed up there. This he denied; nor was it at all likely, as every one admitted he had always treated her with the greatest kindness and affection during the eight years that they had been married. Still, nothing would satisfy the friends and the crowded neighbourhood, who attributed the mania to that circumstance, but a post-mortem examination, which I made on the same day, assisted by my colleague, Mr. Boddy, Dr. Cape being present.

Brain.—Veins and choroid plexus slightly congested. About a teaspoonful of water under the arachnoid, on the upper part of the posterior lobe of the right hemisphere. The whole of the brain was carefully sliced away, and carefully examined, but it was otherwise quite healthy.

Abdomen.—No inflammation of the peritoneum; no fluid effused; all the organs healthy, with the exception of the uterus, which, of course, was still above the pubis. Round the insertion of the left Fallopian tube was a patch of red ulceration, of the size of a dollar, in the peritoneal coat, and in the substance were two or three small cysts, one of the size of a nut, with glairy and purulent fluid in them. Dr. Hodgkin, who examined it, thought them enlargements of uterine sinuses, and plastic lymph could be drawn out from the veins opening into them. There was no inflammation of the uterine or spermatic veins.

The ovary on the left side had several false corpora lutea, and there was a true one in the right.

The os uteri was much bruised and congested.

The preparation is in the museum of St. Thomas's Hospital.

The *Pelvis* was deformed by the projection of the sacrum. It scarcely exceeded three inches in the antero-posterior diameter.

IODIDE OF POTASSIUM IN GOUT.

To the Editor.—Sir: I beg to say that I accord with the suggestion of Dr. Watson, to exhibit the iodide of potassium internally for the cure of gout (see LANCET, No. 1004*),

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* Abridged from the Provincial Journal.—LANCET.

on the ground that I have found, after many years' trial, its solution in distilled water a most valuable external application for the cure of gout, rheumatism, tic douloureux, and chronic inflammation, with enlargement of the joints (see LANCET, Nov. 15, 1834, article on the remedial powers of the solutio iodidi potassii). Eight years have now elapsed since I called the attention of the profession to the efficacy of the solution of the iodide of potassium in chronic inflammation of the joints, whether arising from a specific or an accidental cause, after the usual routine practice had frequently been baffled, even in affording relief. Long ere that period I was in the habit of prescribing it as the best external application for gout, rheumatism, &c., and my confidence still remains unshaken in its curative powers.

Dr. Watson was silent on the *modus operandi* of the iodide of potassium, when exhibited internally for the cure of gout. The hiatus probably will in part be satisfactorily supplied by adding the following formula, which I invariably administer internally, as an adjunct to the lotion, viz. :—

℞ *Pulvd. nitr. potass*, 3iv; *Potass. tart. effervescent.*, gr. ij; *Sp. nitr. æther*, ℥j; *Water*, or comp. infus., ℥xj. Mix.

Make a mixture. Dose, a wineglassful, morning, noon, and evening.

Although the above treatment has quite fulfilled the desired purpose, nevertheless I have no scruple in laying it aside for a season to try Dr. Watson's more simple method, and should the enemy again attack a young subject who has suffered most severely and frequently from gout, though not having yet reached the age of fifteen years, his case will be a fit one for trial, and the result shall be faithfully recorded in the instructive pages of THE LANCET. Your obedient servant,

J. H. HORNE.

Princes-street, Nov. 26, 1842.

POISONING BY THE INHALATION OF IMPURE NITROUS OXIDE GAS.

To the Editor,—Sir: The following case illustrates the peculiar effects produced by the inhalation of impure protoxide of nitrogen, or nitrous oxide:—Three young men had provided a bladder, containing two quarts of the nitrous oxide, for the purpose of exhibiting its exhilirating effects. One of them applied the bag in the usual way to his nostrils, and made about ten inspirations of its contents. Only a slight effect was produced, merely a reeling to and fro, as though labouring under intoxication, which state lasted about twenty seconds, when, thinking that sufficient inspirations had not been made, he again breathed the gas for a short time, and suddenly a series of the most violent muscular motions resulted, which required the combined strength of his companions to control, and continued with unabated force for full ten minutes, when his efforts relaxed, and, apparently, the effects were subsiding, as he became conscious of his situation; but only a few minutes had elapsed before he again exhibited similar forcible movements, striking out in all directions. These alternate intermissions and violent muscular exertions continued for half an hour. In the intervals of the paroxysms his manner and conversation were exactly similar to what is witnessed in the delirium produced by inebriety. On my arrival, finding his pulse beating with most rapid strength, I directed free cold affusion over the head and face, and, opening the temporal artery, took away about ten ounces of blood. Complete success attended these measures, restoring perfect sensibility, the patient expressing himself as being unconscious in the slightest degree of all that had occurred. Contrary to the usual effect of pure nitrous oxide (which produces no after depression, unlike other stimuli), intense languor and fatigue were complained of. The young man recovered in a day or two, merely experiencing a throbbing sensation in the region of the forehead, and a sense of constriction and pain over the right hypochondrium, which were most intense on regaining sensibility, subsequently, gradually disappearing. On inquiry, I found that while preparing the gas from the nitrate of ammonia, the flame was urged too rapidly, and a slight explosion was heard, filling the retort with red vapours. The bladder was immediately removed, and the experimentalists knowing that decomposition of the nitrate had resulted, feared that the gas was contaminated with nitrous acid and nitrogen, the products of decomposition. They tested it by a single inspiration, and its supporting combustion. Perceiving no indications of impurity, they believed that the bladder was removed from the retort before the impure gas had entered, which unfortunately could not have been the case. The subject of the above remarks had previously, on many occasions, inspired the nitrous oxide, the effects being very transient, and consisting solely of muscular exertion. I am quite at a loss to account for the cessation of the motions and their subsequent renewal, resembling so nearly an epileptic attack. That the sense of constriction on breathing was produced by the nitrous acid vapour I have no doubt, although present in such minute quantity as to be undiscernable by the tests applied. Perhaps some correspondents will favour me with their opinions of this case, the details of which I sincerely hope will prove a caution to incompetent persons undertaking the manufacture and inhalation of the nitrous oxide. I am, Sir, yours obediently,

FRANCIS STANLEY.

Lincolnshire, Nov. 21, 1842.

FEEDING INSANE PERSONS. NEW TERMS IN THE VOCABULARY OF INSANITY.

To the Editor of THE LANCET.

SIR,—In THE LANCET for Nov. 26, page 319, I detailed some of the plans adopted towards those insane persons who obstinately refuse food, and I am now desirous, before entering on the means to be brought into operation as auxiliaries to those plans, simply to say, with regard to the propriety of passing food into the stomach by mechanical means, when all attempts to induce the patient to take it voluntarily have failed (and to this step we seem absolutely driven in some cases, in order to support life), that we should fail in our duty did we neglect to administer, by *the stomach-pump*, the necessary nutriment in all cases. Our sympathies for the insane would be founded on false principles were we to be deterred from performing this operation out of regard for the feelings of the patient. This consideration deserves the fullest attention, as it bears also on every variety of insanity. Indeed, in no case should we shrink from the infliction of pain if we believe it to be for the benefit of the patient. The plan of treatment which most speedily restores the patient is the most humane. In our anxiety to be kind and conciliating we must not neglect what is right and necessary, having, in devising our treatment, less regard to the present than to the future condition of the patient. Ultimate benefit is not to be sacrificed to present ease and quiet. We cannot too often contemplate this important principle. Being extremely careful that everything we perform tends to restore the patient, we should promptly determine to perform whatever seems reasonably necessary to that end.

While making these remarks I beg to express my gratification that you, Mr. Editor, have, in a late number of your journal, drawn attention to the terms employed in reference to insanity. The selection of words to express our ideas, or to explain our practice, is, in every branch of science, an important point of attention, particularly when those that are already in use do not convey correct impressions, and where novel practices are proposed for adoption. The members of the association of medical gentlemen who are engaged in the treatment of insanity were early impressed with the necessity of proposing some change in the words which are usually employed with regard to it. In their printed report they recommend that the words LUNATIC and ASYLUM, should be disused, and that the words INSANITY and HOSPITAL, substituted. In this I heartily concur; the word LUNACY is founded in error, and ASYLUM imports a place of refuge, rather than one for the application of curative agents.

The terms "non-restraint," and "non-coercion," or "passive" system, do not convey to my mind any precise idea of the system of treatment now so generally adopted. They imply merely a negative, that is to say, they inform us what is *not* done, and leave us uninformed as to the actual practice pursued. I consider it would be wise in us to use these terms, and also the word "system," as seldom as possible. The history of our profession teaches us to eschew all systems. Our knowledge of the nature and treatment of disease has ever been retarded by their influence. They have tended to establish error, and to found prejudices, which years of patient scientific research have failed to eradicate. Were I to recommend any set form of words, it should be such as would lead to the investigation of the malady, and to the judicious application of remedies. If called upon to coin a name, I would call the *non-restraint* the *rational system.**

Besides a change from the terms "madhouse" and "asylum," to "hospital," or "institution for the treatment of insanity," it would be proper to write for "a maniac," a *case of mania;* for "an idiot," a *case of idiocy;* for "madman" and "lunatic," a *case of insanity.* The word *insanity* conveys to the mind a more definite idea than "insane person," or "the insane;" for it calls our attention at once to the *disease itself;* whereas the other terms indicate the person affected. In speaking of dyspepsia, we call it "indigestion;" we do not say an indigesting person, or the indigesting. I am, Sir, yours, &c. G. L.

Nov. 25, 1842.

*** "Insanity" is an unexceptionable term. "Lunacy," coming from *the moon*, had better return to that planet. "Asylum," has hitherto been a more correct term than it will ever be again; for while in some instances the prisons of the insane have really been to them "places of refuge," in few, or none, have they been *hospitals.* The change to the term "hospital" is most desirable, were it only on the principle that the calling of a thing by its right name is an important step towards obtaining the adaptation thereof to its right purpose. Term all the misnamed "asylums" hospitals, and the public will soon begin to demand—from the little private bar-windowed house in Straight-waistcoat Terrace, up to the great "Bedlams" and "St. Lukes'" of the counties themselves—returns of the *cures performed*, the end of

* Rather a singular compliance with the proposal regarding the word "system" just before made by our correspondent, for which the prefix, *rational*, does not apologise.

which must be a reform of the most sweeping character throughout the whole mass of "asylums" and "houses of refuge," large and small. As for the "*passive*" treatment of insanity, the term which we recently proposed for adoption, it should be remembered that the use of that expression is only advocated in contradistinction from the "brutal" system. The *passive* means a *quiet* treatment, and expresses, clearly enough, the peculiarity which we designed it to indicate. The *rationality*, however, of the treatment is still under debate, and the words "rational system," cannot, therefore, at present, be conscientiously awarded to it by all parties. But the most brutal madhouse-keeper may, without compunction or self-condemnation, term the rival plan the "*passive* system." Either term, however, is temporary, because, when the brutal treatment is abolished, no *opposite* plan will exist to *need* a distinctive name.

ELECTION OF CORONERS FOR STAFFORDSHIRE.

DECEMBER 1.

THE proceedings at elections for coroners embody in the present day questions of interest for members of the medical profession, such as fifteen years ago, having never been popularly raised, had never attached to them. On this account we devote considerable space to the elections which last week occurred at Stafford under this head, having already, in some recent numbers of THE LANCET (pp. 188, 218, 322,) given several particulars, and made certain comments on the events then in progress in that county. The following extracts we insert as matters of news. The letters are subjoined in order to point out to medical gentlemen who, after, at any time, placing themselves in such a position as that assumed by Dr. DEHANE, may know what kind of impression they are likely to leave on the minds of their brethren for the rest of their lives. It is said of a good surgeon that he has an eagle's eye, a lady's hand, and *a lion's heart*. For himself and the friends of well-educated coroners, it is a pity that the Stafford representative of medicine was a "doctor" and not a surgeon; for as to the paltry excuse contained in the letter with which we shall take farewell of Dr. Dehane, as he has taken farewell of the estimation of his professional brethren in his native county, we cannot believe one word of it without considering that his motives were less those of a mere poltroon than of one who was destitute of all correct principle in the regulation of his actions:—

"ELECTION OF CORONERS.—Thursday last was a day of general excitement in the southern division, at least, of the county. At an early hour in the morning Stafford and the various roads to it were 'all alive' with parties assembled to witness the nomination. The ceremony took place in the open air, in the market-place. George Holyoake, Esq., proposed Mr. Phillips to fill the vacancy expressed in the writ issued upon the death of Mr. Smith; and John Barker, Esq., seconded the nomination. The question whether any freeholder had another candidate to propose was then asked, and being met with a negative, Mr. Phillips was declared duly elected. W. F. Fryer, Esq., then nominated Mr. Hinchliffe to serve under the second writ, seconded by W. Fellows, Esq.; and, on the usual question being repeated, S. S. Briscoe, Esq., declared, on behalf of Dr. Dehane, that he had no candidate to propose, and Mr. Hinchliffe was consequently declared duly elected as the additional coroner. Conviviality and rejoicings were then the order of the day until a late hour, when the candidates departed, Mr. Phillips returning to Wolverhampton, where his friends assembled, with a carriage and four, flags, music, and torches, to conduct him through the town, and the whole of the public-houses were thrown open to the villagers in the neighbourhood."—*Staffordshire paper.*

"Mr. Phillips and Mr. Hinchliffe are sworn in as county coroners, and Dr. Dehane has been sent to the right-about, under circumstances which aggravate the stigma previously attaching to him. We understand that, at the moment the candidates were about to be nominated, Dr. Dehane's friends made overtures to Mr. Hinchliffe to buy off that gentleman, but their offer (of 600*l.*) was spurned by Mr. Hinchliffe. We are informed, however, that the magisterial candidate (Dr. D.) consented to receive 300*l.* from Mr. Hinchliffe, to give way at once, instead of merely deferring his defeat, and thereby subjecting his opponents to serious expenses. What will the *medical men*, what will the *freeholders* say, to this? Dr. Dehane, prior to the election, stated, in public advertisements, that his canvass assured him that the feeling of the freeholders so strongly prevailed in favour of the superior fitness of the medical profession to fill the office that he was assured of success: he had called upon his medical brethren to rally round him, and announced that they had done it so effectually that he already looked upon himself as coroner! How, then, can other be said than that he has actually *sold* his medical brethren, and the free-

holders who were his friends? Thank heaven, the county is spared the degradation of having such a coroner!"—*Staff. Ex., Dec.* 3.

"As the day of election drew near the excitement increased, and a very severe contest was expected. The candidates and their friends made preparations to convey the voters to Stafford, and a notice was issued by Dr. Dehane's committee from Dudley, stating that special trains would leave the Wolverhampton station with his voters, adding that refreshments would be provided at Stafford, and trains to reconvey them to Wolverhampton. A similar announcement was made by Mr. Phillips's committee and Mr. Hinchliffe's, leaving Birmingham, and calling at all the stations between that town and Stafford; and that at the inns and houses of entertainment in Stafford refreshments would be provided. From the formidable nature of these arrangements it seemed probable that an expensive and protracted contest would take place.

"On Thursday morning the special train conveying the friends of Dr. Dehane arrived at the Stafford station, whence they walked in procession to the Shire-hall. The party was very numerous and respectable. A band was engaged at Stafford on behalf of Mr. Phillips and Mr. Hinchliffe.

"At ten o'clock the under-sheriff opened the business at the Shire-hall. At this time a considerable body of freeholders had assembled. It now began to be rumoured that Dr. Dehane had determined not to go to a poll.

(This ultimately proving to be the fact, Mr. Phillips and Mr. Hinchliffe were at once proposed, seconded, and declared elected.)

"Mr. Briscoe then said that, as a friend of Dr. Dehane, he thought an apology was due to those freeholders who had promised him their support, for having been brought to Stafford without an opportunity of recording their votes. Circumstances had occurred in consequence of which he (Mr. Briscoe), as one of Dr. Dehane's friends, had strongly urged him not to continue the contest, which would cause a great expenditure of money and a great deal of trouble. This course would prevent the mutual friends of Mr. Hinchliffe and Dr. Dehane from being brought into collision. He hoped that none of Dr. Dehane's friends would feel aggrieved by the turn which the proceedings had taken. If any blame arose from the withdrawal, it rested on him (Mr. B.), as he had strongly urged Dr. Dehane to adopt this course.

"Dr. Dehane briefly addressed the freeholders in reference to his having acceded to the wishes of his friends, and withdrawn from the contest.

"Some additional friends of Mr. Phillips and Mr. Hinchliffe then came up to the hustings, preceded by two bands of music, with flags, &c., and seemed greatly surprised that the election was over. They gave three cheers for the successful candidates, and three for the captain of the railway-train which had conveyed their friends from Wolverhampton."—*Staffordshire Advertiser.*

Throughout all the speeches and addresses published in the newspapers we do not (with a single brief exception) find one word discussing the question of the election on its real merits. Had Dr. Dehane *intended* to play the part of traitor to the cause, he could not have done so in any way more effectually than by adopting the whole line of proceedings which has distinguished his course in this matter. Mr. Phillips, in his parting address (which may have been written before the day of election), with a curious kind of satisfaction, and a singular ignorance of the meaning of words, ascribes his victory, not to the wilful defalcation of the medical candidate, but to some "*triumph* of the freeholders in maintaining *their rights*;" to the "unequivocal expression of the *will* of the freeholders;" "to the circumstance that *their opinions coincided with his*; and that they *intended to evince*, in his election, their sense of the fact that *the district of the late Mr. Smith was that wherein the vacancy really existed*," &c. &c. A very clear-headed and learned attorney-coroner has been saddled on the county of Stafford in the person of Mr. Thomas Moss Phillips. Mr. Hinchliffe takes quite another view of the matter. The freeholders must be gentlemen of very queer principles and feeble intelligence if the trumpery reasons suggested by his colleague influenced them on behalf of the one candidate, while a preference for useless law before practical medical knowledge actuated them in favour of the other. Mr. Hinchliffe says,—

"I thank you, my lords and gentlemen, for the compliment rendered by my election to the profession to which I have the honour to belong. I regard my election, in preference to Dr. Dehane, as a *convincing proof* that the enlightened freeholders of this great county are sensible of *the superior claims of the legal over the medical profession*, to fill the office of coroner; and I thank you, in the name of my legal brethren, for your testimony upon *that* point. Be assured it will be my constant endeavour to discharge the duties imposed upon me so as to justify your preference of members of *my* profession."

Medical men are only humble pursuers of facts elicited by close induction during purely scientific inquiries. How can such

persons, when engaging in the minute investigation of matters of life and death, stand in competition with gentlemen whose license it is to be *inventive*, and who, throughout their professional lives, have as often been employed in disguising the truth on behalf of one set of clients, as for discovering it in favour of another? Attorneys are, to be sure, both well-educated and well-trained for filling judicial medical offices.

Before giving the parting letter of Dr. DEHANE, we must notice a paragraph which forms the first article after a report of the proceedings at the election, in a county newspaper, in the interest of the attorney candidates:—

"DISTRICT NEWS.—An inquest was held on the 2nd inst., by Thomas Moss Phillips, Esq. (the coroner elected on the 1st inst.), at the Rose and Crown Inn, Bromley, on the body of Isaac Lawton, found drowned in the New Extension Canal, on the 1st inst. It appeared, by the *evidence*, that the deceased was a waggoner, at Stourbridge; that he left on the 21st inst.; that he was seen drinking in the neighbourhood on that day, and in the afternoon was met on the canal-side in a state of intoxication, and was cautioned to take care of himself. The next day his hat was taken out of the water, the canal was dragged, and the body found. There was *no appearance of violence on the body*. There was a pocketbook in his pocket, with several papers, among which was an excellent character from the deceased's late employer. The jury returned a verdict of 'Found *Drowned*,' but *how he became so* no evidence appeared."

This is a good beginning. A proper amount of medical experience would have taught the half-educated attorney-coroner, before recording the verdict of the uneducated jury, first of all, that deaths by external violence are not necessarily accompanied by external *marks* of violence; and, secondly, that persons whose bodies are *found dead* in *water* did not, necessarily, die from *drowning*; and a brief attendance in the court of a medical coroner might have convinced him that it was more consistent with the evidence (a pathological examination of the body not having been instituted) to obtain from the jury a verdict of "Found Dead, but how the party came by his death there is not sufficient evidence before the jurors to prove," than one of "Found *Drowned*, but how he became so no evidence appeared."*

* The vulgar wording of the verdict probably belongs to the reporter, but not the fact alleged in the verdict.

In another Staffordshire paper, of the same date (Dec. 3rd) the following announcement appears, not leaving the slightest doubt on the mind that the coroner for Walsall, also, is a member of that corps of whose "*superior claims* over those of the medical profession" Mr. HINCHLIFFE pronounces the freeholders of Staffordshire to be so sensibly convinced:—

"WALSALL.—Five inquests have been held, before W. Cotterhill, Esq., coroner for the borough of Walsall, on persons who died suddenly, viz., November 22nd, on Elizabeth Bradley; on the 23rd, on Thomas Davies; 25th, on Job Chandler; 28th, on John Green and John Jackson. In each case a verdict was returned, 'Died by the visitation of God.'"

Very satisfactory terminations of the inquiries, surely, considering that *all* persons—the slain by accident, the drowned, the suicides, the murdered—may be said to die by virtue of what the attornies have for centuries called *visits* from the Almighty! The drunken wagoner, according to the same rule, died, *for a certainty*, by "the visitation of God," and was *drowned* only by *supposition*. It remained, as a reform at inquests under medical jurisdiction, to show the propriety of abandoning this indiscriminate phrase in *verdicts*, for a more consistent declaration. It was not in the quill-and-parchment brains of attornies to design a fitter verdict in deaths from undoubtedly *natural* causes, without "suspicion" of wrong-doing, and it is still, with rare exceptions, out of keeping with their love of "precedents" to adopt one when prepared for them by others.

Subjoined is the excuse of Dr. DEHANE, followed by a selection from some of the letters which have reached us from Staffordshire since Saturday last:—

"*To the Freeholders of the County.*

"My lords and gentlemen,—Feeling the responsibility of agitating the county to the extent threatened by a continuance of the contest for the coronership, and acting under the advice of influential friends, I felt it my duty not to persevere in a struggle likely to be attended with great inconvenience to the magistracy and freeholders of the county at large, and certainly detrimental to the public quiet. Under such circumstances I at once resign my pretension. I have the honour to be, my lords and gentlemen, your most obedient humble servant,

"J. DEHANE, M.D.

"Stafford, Dec. 1st."

RESIGNATION OF DR. DEHANE AT THE NOMINATION.

To the Editor of THE LANCET.

SIR,—I regret to inform you that Dr. Dehane has, to the astonishment of all, frustrated the strenuous exertions made on his behalf by THE LANCET and the medical practitioners of this important county. He has, indeed, inflicted a heavy blow on his profession, and he had, for its sake, better not have been born than have become a candidate for the coronership. Your readers will remember that on the death of Mr. Smith (the late coroner) two medical gentlemen presented themselves to fill the vacant appointment, namely, Dr. Turnbull and Dr. Dehane. The former gentleman no sooner became acquainted with the intention of Dr. Dehane than he consented to retire, of course, nothing doubting but that Dr. Dehane would proceed to the poll, let what would occur, consequently becaming one of his most active supporters; and, notwithstanding the inexplicable and mean course which Dr. Dehane thought proper to pursue, the promises which he had received from Lord Ward and all the more respectable freeholders of the county, rendered his election almost a matter of certainty. But, on the morning of nomination (Dec. 1), in spite of the gross and culpable negligence evinced in the mode adopted for bringing up his voters, by the efforts of a few friends Dr. Dehane's special train left the Wolverhampton station for Stafford with no less than 360 gentlemen pledged to record their votes for him. Conceive what was their surprise, on their arrival, to find that the medical candidate refused to be even nominated. The consequence was that his opponent, a member of the profession of the law, was forthwith installed into the coronership. I ask Dr. Dehane how dared he thus to treat his professional brethren and his zealous advocates? As a gentleman he was bound either to go to the poll or to signify his wish to retire from the contest, so that Dr. Turnbull might have had an opportunity of coming forward on behalf of the medical profession, when there can be no doubt that Dr. Turnbull would have been elected, and the profession saved this signal defeat. As it is, the medical practitioners of this town and neighbourhood, to a man, feel themselves unwarrantably outraged by one who, possessing ample means, ought to have struggled to the last to crown with success the labours of his medical brethren. It is currently reported that he received payment of certain demands for his retirement. If Dr. Dehane supposes that he can continue to practise in Wolverhampton, he is no observer of human nature, for "a wounded spirit who can bear?" No; no more of Dr. Dehane *here*. The medical men of Staffordshire, one and all, consign him to the obloquy which his conduct merits. I remain, Sir, your obedient servant,

A MEMBER OF THE PROFESSION AND A FREEHOLDER.

Wolverhampton, Dec. 2, 1842.

To the Editor of THE LANCET.

SIR,—As you have devoted a portion of your space to the question of the recent vacancy in this county, and have even allowed the subject to elicit from your pen a very clear and forcible editorial article, I doubt not that you will be supplied with a detail of the proceedings this day at Stafford. I will only, therefore, beg permission to express thus publicly the feelings of one who has been wiled away from his home and his usual pursuits, at the express invitation of the medical candidate, to behold the claims of the profession prostrated at the feet of that many-headed monster, *Conservatism*. When Dr. Dehane solicited the support of his brethren it was expressedly on the grounds of the vastly superior claims of the medical profession, a superiority, by the way, which, thanks to yourself, Sir, especially, the public are disposed more and more to admit. It was expressedly avowed that political feeling was not to enter into the question. What was the surprise, then, today, of myself and a party of professional friends accompanying me, expending on the occasion the most valuable possession of men who are in actual practice, to find the two attorney candidates nominated and appointed in *two minutes*, after repeated inquiries by the under-sheriff whether there were *any more candidates*, when a fat friend of Dr. Dehane rose up and declared that he and others had, at the last moment, induced the Doctor to *withdraw himself*, from *their unwillingness to oppose Mr. Hinchliffe*, and that on his own broad shoulders the whole criminality must be laid! After which Dr. Dehane himself rose to say that it was most true he had withdrawn, and, forsooth, because "he could not think of dividing *the conservative interest!*" Was ever such a preposterous declaration made before? Are the claims of a profession, which the public had been assured here, over and over again, were eminently superior to all others on this occasion, to be cushioned, without a word of further apology, on the mean and equivocal plea of not dividing a *political* interest? Even if there be moments in which a man may sink his profession, however dignified it be, and such an apology should serve to sponge out from the minds of Dr. Dehane's Tory friends all memory of *medical* claims, it is a direct insult to those of the liberal party who came forward on the broad professional ground to fight under the medical banner. I cannot help feeling that some better apology is needed.

However, regret as we may that the Staf-

fordshire freeholders have been sent home again as they left, it is to be feared that the question of a medical coroner for this county has been put back at least twenty years by one of its friends, who, if he had good reasons for declining the contest, was surely required to state a tithe of them. The Staffordshire freeholders stood in need of that enlightenment which a talented medical coroner might have diffused among them on the subject of human life and the grounds of its forfeiture. Sorry I am to add, that this county enjoys the bad pre-eminence of having been the last scene in which the fearful and impious writ, *De hæretico comburendo* was put in force, and that it was also in Staffordshire that the last witch was burned, so lately as 1751. I remain, Sir, an occasional reader, D.

Dec. 1, 1842.

P. S.—I, perhaps, ought to allude to a report which has gained great currency here, namely, that the resignation was a cash transaction, in which the sum of £300 formed a conspicuous feature.

To the Editor.—Sir: I am sorry to inform you that no poll or contest has taken place, Dr. Dehane's courage having so completely failed him that he refused to allow himself to be nominated. I fear that the manner in which he has conducted his canvas for the office of coroner will neither reflect credit upon himself nor raise the medical profession in the estimation of the public. It would have been well that he had never come forward, as it is very certain that other individuals of the medical profession would have become candidates and contested the election. I am, Sir, your obedient servant,

MEDICUS.

Wolverhampton, Dec. 1, 1842.

NOTE FROM MR. ANCELL.

To the Editor.—Sir: I have read with great pleasure and interest in this day's LANCET (page 342) the criticisms of Dr. P. B. Ayres, of Thame, on certain parts of two of Liebig's most prominent theories, but since you will find our author's whole argument respecting the origin and uses of the bile stated in my manuscript, already prepared for the press, I forbear for the present making any remarks on the arguments which Dr. Ayres' paper contains. I propose to return to the question of organic motion in a further communication, but even with every attention to the economy of space, the papers must somewhat exceed the number sanctioned. Considering the extent and the importance of the subjects embraced in Liebig's work, I feel assured that neither yourself nor your readers will object to this. I am, Sir, your obedient servant,

HENRY ANCELL.

Norfolk-crescent, Oxford-square,
Dec. 3, 1842.

THE LANCET.

London, Saturday, December 10, 1842.

No circumstance retards the improvement of the law in this country so much as the blind and slavish adherence to *precedent*. A case is brought before the Court of Queen's Bench which involves some newly-discovered principle. The subject may, or it may not, be well argued. The judge may be a man possessing great legal learning, like Lord TENTERDEN, or his mind be stored with very little, like that of Lord DENMAN. The Court decides, and in each instance posterity is furnished with "A PRECEDENT." As an example of one kind it may operate, throughout future ages, for *the benefit* of society. As an example of an entirely opposite character it may work *mischief* until its noxious tendencies are averted by the provisions of a Parliamentary statute. The lawyers are not the men who are likely to get rid of bad precedents. They submit to past decisions of the Courts with a degree of truculence which betrays an utter absence of independence of spirit. They dare not bristle up against the authority of a judge,—dare not question the soundness of his decision with the boldness of manner and language which would show that they were sincere in the cause of justice and sound principles. *Precedent* is their rule, their guiding star. "Precedent" is the governing maxim of the common law of England.

But it may be asked, if we desire the common law of this country to be without rule, and whether it ought not to be known by some established clearly-recognisable, distinctive marks, which should always be present to the understanding, whenever the principle of any decisions in our courts of law are under investigation. Undoubtedly, we do desire that it should be thus known and recognisable. But the dictates of common sense, and the obvious demands of justice, ought not to be disobeyed on such occasions. Unfortunately, however, these slumber, and

are held in abeyance, while the authority of "precedent" is alive, active, and uncontrolled. If barristers entertained less expectation of *preferment*, the public might have more hope of success in the cause of useful legal reformations; but, at present, the just desires of the public are lost in the selfish anticipations of the individual.

The influence of *precedent* in our courts of law, perpetrates mischief in a thousand shapes, and scatters its poison into all the ranks, and amongst all the interests, of society. The judges appear, in this respect, to be insensible of their own power, or to be by far too indifferent as to the manner in which it is exercised. We hold it to be unpardonable in a judge, when deciding on the facts of a case, or even on a dry point of law, to indulge in extra-judicial observations,—in remarks which are not strictly applicable to the subject which has been legitimately and properly brought under his consideration. In acting thus, he is delivering an opinion on a point that has not been *argued*,—on one that has *not been submitted to the Court*,—on one which the Court is not *judicially* called upon to determine. Were it debated, the mind of the judge might receive impressions which would be totally adverse from his previously-entertained opinions. In the case reported in EAST, the judge delivered himself of extra-judicial opinions, which have had the effect, in many counties, of causing the justices of the peace to constitute themselves into an authority at Quarter Sessions, to the utter destruction, in those places, of the *independence* of the Coroner's Court. The case reported in EAST, which we copied last week (page 362), may be thus briefly stated:—A Coroner, having attended a village to take an inquest, was informed by some of the jurymen and others that a person had, a few hours previously, fallen down in an open shop and suddenly expired. The Coroner, after holding the first inquest, re-swore the jury, and took his inquisition in the second case. On sending in his account to the session, the justices refused payment for the last-named inquisition. The grounds of the refusal were not stated. The Coroner, feeling aggrieved, applied to the Court of Queen's Bench for a mandamus, to be issued to the justices, calling upon them to show cause why they had not paid the fees in question. The rule was refused, and then it was that the judge, going out of the case which was before him, remarked that Coroners had often acted "most oppressively and vexatiously, by obtruding themselves into private families." The counsel who moved for the rule ought not to have thus quietly listened to an invidious attack upon the character and conduct of his client. He should have had nerve enough to tell the judge that the Court was travelling out of the case, and was, without any proof, or a single fact, before the bench, to justify the proceeding, libelling the conduct of a numerous, respectable, and useful body of public officers. The language held by the judge on that occasion was altogether preposterous. When he decided that the Coroner should not have redress he may have been right, because the advocate of that officer showed that the inquest was not taken according to the strict forms of law. But why did the judge seize upon the opportunity for attacking the conduct of Coroners generally? Why did he utter the nonsense respecting Coroners "obtruding themselves into private families," unless it were his desire to bring the office into contempt, and render the inquest useless? Upon no other grounds can we comprehend or explain the language or conduct of the judge. But a "precedent," established even under the influence of a *vindictive feeling*, may carry with it the weight and authority of one that has been the result of a particular consideration, and of the dispassionate exercise of a sound judgment.

The statute law declares that Coroners *shall* hold inquests on *all* cases of sudden death. The interpretation which Lord ELLENBOROUGH put upon the words of the statute was, that an inquest should not be held in a case of sudden death unless the

death was attended by "suspicious" circumstances." The language of the statute is clear; that of the judge is clear; and it is equally evident that the meanings of the two are as opposite as the poles. No forces can be more strongly antagonised than are the statutory and the judicial expositions of the duties of Coroners, as thus described. The statute law directs the Coroner to go and inquire in *all* cases of sudden death. The judge exclaims, "No, not in *all* cases; but "only where there exists a suspicion of "crime."

We have already explained, in previous articles, that *juries* might, with equal propriety, and with equal legality—for judges can act unlawfully as well as other persons—decide that in cases of *accident*, or *violent* death, Coroners are not to hold inquests unless it is believed that the lives of the parties have been taken by criminal means. Let us now take a third class of cases, that of deaths in *gaols*. What says the *statute* law? Why, that you shall hold inquests on the bodies of all prisoners who die in gaols.* Why should not the judge, with equal propriety as in cases of sudden death, here also interpose his authority, and declare that the Coroner shall only inquire into those cases of death in gaols which are attended with suspicious circumstances, and that to attend otherwise would be a vexatious and oppressive obtrusion into the private families of the governors of those institutions? If the inquests in gaols were thus narrowed down to the few cases in which unfavourable circumstances were known to exist, how often would the Coroner institute inquiry in those institutions, and what protection would the inquest afford to the unhappy prisoners? The amount of benefit would be too small to admit of description. In the notorious Northleach case there were no "suspicious" circumstances until they were disclosed in the evidence, given upon oath, before the Coroner and jury. Lord Chief-Justice Ellenborough, and others who have thought and acted like him, have been unmindful of the fact that individuals who take away life by criminal means, are the most deeply interested in preventing the appearance of "suspicious" circumstances, and the Act of Edward was evidently framed under the influence of that conviction. The *primary* object was to prevent crime; the *secondary* was to detect it. That statute has provided that in *all* cases of sudden death there shall be an inquisition before a Coroner and jury, whether "suspicious" circumstances exist or not. The provision has the effect of preventing crime—of saving human life; because those who are criminally disposed know that it is the *suddenness* of the death which will call the agents of the law into action, and that a concealment of circumstances of a suspicious nature cannot have the effect of preventing an investigation. In that provision consists the great protection to the public which the Court of the Coroner is capable of affording. It is to be hoped that if justices of the peace *can* be induced to believe that a learned Lord Chief-Justice of the Court of Queen's Bench has delivered himself of some gross absurdities relative to the duties and office of Coroner, those Justices can also exercise sufficient sense to discover that *their own* sayings and doings in relation to the same subjects have not borne any very strong indications of wisdom.

* And it ought to extend to the bodies of all persons dying in "Lunatic Asylums."

Obituary.—With the deepest regret we have to announce the death, on the 23rd November, of Mr. Daniel Cooper, the originator and principal supporter of this journal. The death of one who was in the prime of life, and in the very blush of realising the fruits of his laborious industry, exerted under many difficulties, cannot fail to excite the sympathies of all. But by those, and they are many, whom a personal acquaintance had rendered familiar with Mr. Cooper's amiable character and great worth, his loss must be most deeply and poignantly lamented.—*Microscopic Journal*, Dec.—We are equally sorry to receive this intelligence, as our contemporary is to communicate it. Mr. Cooper was the author of the paper, published in his name, in The Lancet for October 29, page 164, on the Army Medical Herbarium at Chatham.

THE PROBLEM.

NONE of the solutions offered as a reply to the "Problem in Medicine," at page 365, of last week's LANCET, corresponded in any respect with the autopsy. They all accord very well as rational deductions of disease under treatment judged by medicaments prescribed. But the variations from the fact may be estimated by a description of the post-mortem appearances actually discovered, made five days after death, at the workhouse of St. Giles-in-the-Fields, where the unfortunate patient was conveyed a corpse. The prescriptions shall first be repeated, that the whole may be in fair apposition:—

"BLENHEIM-STREET FREE DISPENSARY
"AND INFIRMARY,
"1, Blenheim-street, Oxford-street.
"Dr. Hastings, Physician.

"A. Elphinstone, admitted Oct. 8th, 1842.

"R. *Ant. pot. tart.*, gr. ii; *aq.* ℥iss. Cap. coch. min. j ter in die.—"App. emp. calfacient, ad sterno.

"Oct. 11. Rep. gutt. Add. *tinct. digit.*, ℥ss.—R. *Pil. aper.*, ij, o. n.

"Oct. 15. Rep. gutt., ℥j.

"18. R. *Acid. sulph. dil.*, gutt. xx; *infus. gent. comp.*, ℥ss. Cap. coch. larg. ij, bis terve in die.

"20. Rep. mistur.; rep. pil.

"25. Cont.

"27. *Pil. pectoralis*, xii; ij nocte maneque.

"29. *Pot. iodid.* ℥ss; *aq.* ℥j. Cap. coch. min. j, ter in die.

"Nov. 8. R. *Pot. iodid.*, ℥j; *tinct. dig.*, ℥j; *aq.*, ℥j. Capt. coch. min. i, ter in die.—*Pulv. cathart.*, gr. xv., stat. sd."

On Tuesday, the 8th of November, this patient of a London dispensary "took to his bed," unable to pay another visit to Blenheim-street, the rules, he understood, not permitting him to be visited at his miserable home. On the following Friday, November 11th, he requested a person who was in the room with him to take his hand, and having simply observed, with satirical reference, probably, to the unhappy plight in which he was leaving the world, that "it was fashionable, he supposed, in London, to die in one's drawers," presently gave up the ghost.

[After the above and the subsequent autopsy were in type, we were favoured with the following letter from Dr. Hastings, physician to the dispensary, which we interpose now between the two]:—

To the Editor of THE LANCET.

Sir,—I am sure you will in justice allow me space in your columns, while I endeavour to solve "A Problem in Medicine," as well as to defend myself and the valuable institution to which I belong from the malicious attack of the very contemptible and anonymous propounder of the Problem in THE LANCET of last week.

Adam Elphinstone, the patient in question, was admitted under my care at the Blenheim-street Free Dispensary, on the 8th of October, aged 53, an active, intelligent man, of a sanguine temperament, and intemperate habits; nevertheless he had always enjoyed tolerably good health, with the exception of cough and difficulty of breathing during the winter, for the last three or four years, and it was in consequence of a renewal of one of these attacks, more severe than any previous one, that induced him to seek relief. He complained chiefly of cough, difficulty of breathing, and palpitation of the heart; he expectorated freely; appetite not much diminished; bowels sluggish; no diminution of urine; pulse quicker than usual, but very compressible; mental condition excellent. On examining his chest, which was remarkably well developed, the intercostal spaces, superiorly, were widened and convex; percussion here yielded an increased sound, and auscultation a variety of musical notes, the respiratory murmur being almost inaudible. The heart occupied a larger space than usual, with increased impulse, the stethoscope elicited an augmentation of the first sound, which had its greatest intensity on the right side, and somewhat above the left nipple, where a bruit was distinctly heard; sub-crepitant râles occupied the inferior and middle portions of both sides of the chest.

From the foregoing history bronchitis was diagnosed in the lower, and emphysema in the upper, portion of the lungs, with hypertrophy, and, probably, dilatation of the right ventricle, as well as insufficiency of the sigmoid valves. If any other lesions existed, they must have been of a very chronic character, as the patient had no symptoms to cause the least suspicion of further mischief than what I have stated; but from his being of intemperate habits, combined with other circumstances, I should have *some doubts* of his liver being *healthy*.

General blood-letting being inadmissible, and the patient unable to procure leeches, I had recourse to the next best, nay, if not the very best remedy, viz., tartar emetic, under the influence of which, with counter-irritation and aperients, he continued for eight days with so much success, that a tonic treatment was early indicated, and at the conclusion of another week he took his leave, thanking me most gratefully for my services, stating his intention to proceed to Hull, where he had children in circumstances to assist him, he being in great poverty in London.

Two days afterwards he again applied at the dispensary with an aggravation of his disease; for the last twenty-four hours he had passed no water, and œdema had began to show itself in the feet and legs.

I now commenced with the hydriodate of potass, a remedy well known to possess great power over the heart and secreting organs generally, and thereby admirably calculated to fulfil the object I had in view, viz., to control the heart's action, and produce diuretic effects. The plan of treatment was unfortunately not strictly adhered to by the patient, and when he next visited me, having allowed ten days to elapse, he was much worse; whereupon I urged him to get into an hospital, in the meanwhile providing him with more hydriodate, in increased doses, with the addition of tincture of digitalis and aperients.

Such is the history of this case, and the treatment I adopted, the propriety of which I challenge the anonymous writer to question, selecting for judges your experienced and intelligent readers.

If the anonymous writer has anything new to add, I shall be only too happy to be informed, and beg to assure him I shall be the last person to shrink from the investigation. As to the Latin errors, they are so evidently the combined result of an illegible hand and hurry arising from the immense number of patients I have to prescribe for at the dispensary, three days in the week, that they are scarcely worth criticism; but it is enough that the dispenser of the institution understood the prescriptions: had they been intended for publication it would have been another matter. I am, Sir, your obedient servant,

JOHN HASTINGS, M.D.

14, Albemarle-street,
Dec. 6, 1842.

Post-mortem Examination.

The examination of the body was made five days after death. It was naturally considerably decomposed, and presented extensive separation of the cuticle. There was no emaciation, or only very little.

In the cavity of the peritoneum were found about two pints of bloody serum.

The Stomach was natural in size, and healthy throughout its whole extent, excepting at about the middle of the lesser curvature, where there was considerable thickening; and an ulcerated opening, apparently leading to an abscess in the liver, which contained about an ounce of darkish-green fluid, having no peculiar smell or appearance.

The Intestines were healthy, and contained a small quantity of a similar fluid.

The Liver.—Old and firm bands of adhesion were found, connecting this organ to the under part of the diaphragm and posterior part of abdominal muscles. It was enormously enlarged, and weighed *nine pounds*, filling the whole of the right side, and the upper and anterior part of the abdomen. It presented large masses of cancerous deposit, many being in a softened condition. One of these opened into the stomach.

The Gall-bladder was small, and contained some biliary calculi.

The Spleen was large, and, as well as the pancreas and the kidneys, was healthy.

The Heart was flabby, and the cavities were large, and the walls consequently thin.

The Lungs.—The right was gorged with black fluid blood, the result of transudation. Firm bands of adhesion connected the whole of the right lung to the side of the chest. The left lung was healthy. About a pint and a half of fluid was found in the pleura.

The Brain and its membranes were perfectly healthy.

Where one such tale as this comes to light, how many thousands of dispensary patients die and leave no sign?

*** The reader will be at a loss now to discover in what respect the publication of the prescriptions last week was either "malicious or very contemptible." They were inserted in perfect ignorance even of the name of the medical officer who ordered the medicine, although that of Dr. HASTINGS was printed on the dispensary ticket. As for the "Latin errors" they formed no part of the question at issue, as Dr. Hastings will plainly see on perusing the account of the autopsy, which was promised last week to be given to-day. As a specimen of dispensary practice—a species of practice which does not even afford leeches in the medical treatment of patients, however urgently indicated—we agree with Dr. Hastings that the case may safely be left to the experienced and intelligent readers of this journal for a judgment upon the facts.

TINCTURE OF IODINE FOR THE LIDS IN CONJUNCTIVITIS.

To the Editor.—Sir: I find in THE LANCET of Nov. 19th, a strong recommendation from Dr. Hocken, of the nitrate of silver in conjunctivitis, the mode of applying it being to smear it over the upper palpebræ; and in the number for Nov. 26, a reclamation of the practice by Mr. Wormald.

Having been for many years in the habit of prescribing for cases of conjunctivitis (chiefly strumous, and therefore the most obstinate, usually), and having enjoyed many opportunities of watching these distressing cases amongst the numerous out-patients of the infirmary at this place, I would beg to recommend to Dr. Hocken a trial of painting the palpebræ of the affected eye, or eyes, with the alcoholic solution of iodine, commonly called the *tr. iodin.* For very fine skin in children the strength may be lowered. I was led to apply this remedy thus; by reflecting on the continuity of surface

between the skin and the conjunctiva; and, truly, the effect has been beneficial in an extreme degree. The distressing lachrymation is immediately relieved, and I have had reason to think that in several cases I have stopped ulceration of the cornea. The remedy is easily applied; it dries on, gives no trouble, and requires some two or three applications every week, according to the effects. In the first stage leeches have almost always been premised, but most of the cases have been brought before me in a very advanced and intractable state, when no leeches were requisite. If Dr. Hocken and Mr. Wormald have not tried this application in the way I have described, I think they will find it an useful addition to their present list. I am, Sir, yours obediently,

J. J. Furnivall, M.D.,
Physician to the General Infirmary at Hertford.

Hertford, Nov. 27, 1842.

FOREIGN MEDICAL CERTIFICATES.

To the Editor.—Sir: In your valuable periodical of the 26th November, I noticed in your answer to "R. G." an error, which I can from personal experience correct. You were right respecting the College, but certificates of attendance at lectures and hospital practice in Paris *are recognised by the Hall*, and there is an article to that effect in their printed regulations. The College of Surgeons, however, with that illiberality which characterises nearly all their proceedings, will not receive any such certificates. Although those lecturers and hospitals are second to none in Europe, yet they reject the certificates of such men as Orfila, Velpeau, Andral, and Cloquet, and snatch at the testimonials of obscure lecturers in fourth-rate London schools, whose names have never been heard of or printed beyond their class-rooms or placards. Many of the examiners themselves receiving heavy fees from the students for certificates, their reasons for excluding foreign certificates is obvious enough. The Faculty of Medicine of Paris admits candidates holding the diploma of the College of Surgeons to the examination for the degree of M.D., on producing also certificates of attendance to the extent of one-third of the Paris curriculum, the diploma of the London College being reckoned for the remainder. Unhappily, that College is a stain upon the medical laws of the country soon it is to be hoped to be deprived of the unnatural and injurious influence which it is enabled to exercise upon medical education. I am, Sir, yours respectfully,

J. Berncastle, M.R.C.S., L.A.C., &c.
London, Nov. 29, 1842.

The Function of the Spleen.—In our notice of Mr. Stevens's reported discovery of the function of the spleen, we deduced that fat was disease, a result which, we presume, according to the views of Mr. S., may be worked out thus:—The chief element of fat is carbon. The liver eliminates, or uses, carbon in the secretion of bile. Stout people are all commonly presumed to have small spleens, *et vice versâ*, as well as a sluggish secretion of bile, and a consequent retention of carbon in the form of fat. The connection is easily traced. With regard to another branch of this subject, some physiologists have persuaded the better-informed graziers that the quantity of real muscular tissue is, in the same adult animal, nearly always the same, and that a lean animal differs only from itself in a well-fed state, as regards the quantity of fat (and carbon). By the experiments of Mr. Stevens we take it for granted that that gentleman is inclined to this latter opinion, the fat intermingling with the muscular fibrillæ, and permeating the whole cellular tissue, not perhaps even excepting the sarcolemma, the hint being given to the sheep-graziers as a fact that probably possesses a certain value beyond that which attaches to it as a mere physiological curiosity, and as a datum in Mr. S.'s conclusions on deeper physiological points.

THE SINE-SPLENIC MODE OF FATTENING.

To the Editor.—Sir: In my paper "On Some Effects of Tying the Splenic Artery," which appeared in The Lancet of Oct. 8th, the remarkable fattening of animals after that operation is clearly shown; and in a following paper, forwarded to The Lancet on October 22nd, the proposition of applying that operation to the specific purpose of fattening animals, is clearly announced as a necessary result of my experiments. It is but fair, then, that you give me the opportunity of stating that my paper containing this proposition has been at your office *six weeks*; and it is notorious with my friends, amongst whom I may name Mr. Bishop, surgeon, of Newington, and Mr. Gane, of the same place, that I adopted this plan some months since. The former gentleman is, indeed, aware of an offer made to me of a smart sum of money by a dealer in Leadenhall-market if I would tell him my method of fattening animals; and presently we shall see that cachexy, or disease of the assimilating powers, which is the "law" or "nature" of phthisis (by which I mean that

wherever phthisis is present, there this, its "nature," will infallibly be, whatever may be *its efficient cause*), is precisely that condition of body in which the tying of the splenic artery is successful, producing an entire and beneficial change of the diseased assimilation, not, as alleged, by increasing the peripheral circulation, but by the removal of the cause of the cachexy. Trusting that this note will neither be too long nor too copious to obtain an early insertion, I am, Sir, your most obedient servant,

FRANCIS EAGLE.

Kingsland-road, Dec. 5, 1842.

PUERPERAL FEVER.

MR. FRENCH, surgeon to the St. James's Infirmary, with reference to the statement in THE LANCET of Nov. 12th, by "An Old Pupil of Dr. R. Lee," that no obstetric case of any importance has occurred in St. James's Infirmary without the doctor's opinion having been consulted, bears testimony to "the valuable services" which he, for twelve years, and his predecessor, Mr. Baker, during the three preceding years, derived from Dr. Lee, during which period "a considerable number of the most difficult cases in midwifery occurred in that institution." Mr. French observes, "It is curious enough that so very cautious a practitioner as Dr. R. Lee should be accused of rashness. A more careful perusal of his opinions and doctrines will," he considers, "correct this impression in the mind of 'Blundellulus.'" He adds, "I cannot refrain from expressing a wish that Dr. Lee's views of the nature of puerperal fever (fully published) were more generally and thoroughly known. The knowledge of the fact that the uterus, or its appendages, is invariably the seat of lesion in this disease, leads to the detection of the actual condition of those organs, where the obscurity of the symptoms would not indicate the least mischief, the discovery of the exact seat of disease in this dangerous complaint often suggesting a topical mode of treatment which is most effectual for its relief. I have known local treatment (cupping on the loins and leeches to the anus) to afford great relief to a patient affected with extremely rapid pulse, delirium, and suppression of the milk and the lochia, but who had no evident abdominal pain, excepting that which was discovered by a careful examination of the uterus, and was by that means referred to the posterior portion of this organ. I have also observed severe lesions in this situation only, in fatal cases after childbirth, where the uterus was supposed from the symptoms to be free from disease. Nov. 15th."

WESTMINSTER MEDICAL SOCIETY, Dec 3rd.—After some remarks on the treatment of obstinate constipation, Dr. F. Bird related a case of abscess in the walls of the uterus communicating with the rectum, presenting facts which were curious from the rarity of their occurrence; cases at all parallel only ing found in the works of Mme. de Boivin, and one or two other writers. After which Mr. Brooke brought forward, under the title of "modified variola," some cases with the object of showing that the two diseases, variola and var. vaccinia, may occur simultaneously (a fact not generally admitted), each disease modifying the influence of the other; and, secondly, that in a series of three cases, occurring under precisely similar circumstances, the intensity of one disease bore an inverse ratio to that of the other. We shall not have room to report the cases and discussions at length until next week. On the 17th December Dr. Reid is to read a paper on the palliative mode of treating vesico-vaginal fissure.

ROYAL COLLEGE OF SURGEONS IN LONDON.

LIST of gentlemen admitted members on Friday, December 2, 1842, J. O'Hea, T. Morgan, D. M. Aitken, J. Dwyre, J. G. Rusher, H. B. S. Brock, T. Bishop, G. Tweddell, C. J. Farr, G. E. McLaughlin, J. R. King, J. H. Gramshaw.

CORRESPONDENTS.

To the Editor.—Sir: With reference to a paragraph in THE LANCET of the 26th Nov., p. 335, relative to the Parisian medical schools, I beg to forward you the following extract from the regulations of the court of examiners of this society, published in 1835:—"The certificates of teachers recognised by the constituted medical authorities in Dublin, Edinburgh, Glasgow, and Aberdeen, as also those of the *medical professors in foreign universities*, are received by the court." I am, Sir, your obedient servant,

HENRY BLATCH, Sec.

Apothecaries' Hall, Dec. 1st.

The case of *Dr. Bryce*, in which about three ounces of lead-shot were swallowed, the patient recovering, shall be inserted. The private request of Dr. B. shall be complied with.

The paper of *Mr. George Ross*, of Enfield, in which that gentleman says, "I am happy to find that the attempts of Mr. Stevens to elucidate the function of the spleen by a microscopic examination of its structure seem to have produced results entirely coinciding with inferences which I have myself drawn from pathological data," will be inserted on another occasion. We take the opportunity of saying here, that we cannot admit into our columns criticisms on the *possible* discoveries, or presumed errors, of an author not one iota of whose labours has been referred to in public, excepting upon rumour. With reference to the question asked by *Mr. Ross*, in his private note, we beg to say that we must see one of the

papers referred to before giving the affirmative reply which will most probably follow.

Juvenis.—Several writers have afforded grounds for believing that the first supposition is correct. With regard to the second, this is not the day for conjecture without experiment. If our correspondent can do anything towards establishing the presumption he will act usefully, but he must work for himself, seizing his own opportunities and employing the resources of his own mind.

A Licentiate of the Hall should be less confident. In the case of Joce *v.* Shapland, the legal advisers of the plaintiff, previous to the trial, had obtained the opinion of an eminent special pleader that the evidence which they proposed to produce in court, in proof of the seal of the Company, would be quite sufficient for the purpose.

It was not possible to find room this week for the communication of *Mr. Jackson*, who is wrong in supposing that *Amicus Veritatis* "never lifted his head since he (Mr. J.) flung a fact at it." We have, for several weeks, had a reply on our table from "Amicus," but more valuable matter than controversial has arisen to occupy the place which might have been filled by disputes. Although we shall find room for a proper discussion of the topics under debate in relation to the spleen, we can award none for sallies of wit and humour on the subject.

Union Workhouses.—*To the Editor.*—Sir: In The Lancet for Nov. 26, a correspondent inquires if you are aware of any union workhouse in which the actually-sick cases are attended by the medical officer for a sum of only two shillings per case. I have the authority of the medical officer of the Brentford Union Workhouse for stating that he, at his present salary (viz., £60 per annum), is remunerated with only 2*s.* 2*d.* per case. This is under the system of *tender*. After the 19th Dec. the "new system" is to commence throughout our union, and the salary will then be reduced to £50 per annum, or 1*s.* 11*d.* per case, and this, "notwithstanding the recent recommendation of the poor-law commissioners, that all union surgeons should be *adequately remunerated as parochial medical officers.*" It has been generally stated by the medical profession (and I hope the public will, ere long, be convinced of the fact) that the poor cannot be sufficiently attended in illness under *five shillings* per in-door case, and *six shillings* per out-door case. To prove to you that I write disinterestedly, I may mention that I have resigned my office after the 19th, refusing to accept the above rates of remuneration. I remain, Sir, yours respectfully,

H. J. Radcliffe.

Brentford Butts, Dec. 5th.

Others may agree with *J. S.* that sufficiently early attention to form an early correct diagnosis was not given to the signs discoverable by auscultation, but is it worth while to fill nearly as much space as the case itself occupied to say so, especially since the patient is dead and gone, and under no treatment could have recovered? Moreover, the relation of the case speaks for itself, and any deficiency characterising it was detectable without the aid of our correspondent's spectacles. The case, however, was a good one, was very properly related, and will pass for just as much as it is worth, whether as a collection of facts or as a caution.

We are acquainted with all the proceedings of the Westminster hospital physicians, and shall publish an account of them in due time.

The paragraphs of the foreign authors comprised in the article at page 254, headed by us "Priority of Theories," were derived from a review of Dumas' Essai Statique in the "Annals of Chemistry" for October, No. 2.

The statement of *A Looker-on* requires authentication. Whence, too, was it derived? From a newspaper, or from notes taken in court by our correspondent? In the former case the whole might be thrown by *Mr. Hartley* on the shoulders of "a bad reporter."

Precator we would, nevertheless, advise to adopt the course which he says "would be attended with great trouble and inconvenience to him, to say nothing of the expense." To *wait* would, after all, perhaps, only be to experience the effect which "hope delayed" is said to produce upon some patients, namely, sickness of the heart.

L. A. C. S., &c.—By all means forward petitions. No other course is open to the parties aggrieved. Many petitions, short and forcible, with even but one signature to each, would be better than one with many names.

It would be idle for *A Cheshire Correspondent* to attempt to undergo the examination, as his right to practise, and his qualification as an apothecary for holding office under the poor-law commissioners, in that respect is as good as though he held a dozen of the documents in question. But he must also possess the diploma of the greedy college in Lincoln's Inn Fields.

The note of *G. L.* (whose injunction will be observed and last letter is inserted); the letter from *Filey*; the "interesting experiment at Morningside Asylum;" and the statement of *A Subscriber ab initio*, have been received. *Mr. Browning's* letter is delayed for some inquiries.

A Naval Medical Officer.—They are not. They must "submit." They may practise as surgeons only.

Erratum.—In Mr. Crisp's paper (Lon. Med. Soc.), at page 355, line 15 from bottom, insert *dilute* before *hydrochloric*.